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changes

# ARMY APPROPRIATION BILL

1920



## PAY OF THE ARMY

FISCAL YEAR 1919-20

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Printed for the use of the Committee on Military Affairs of the House

---

PART 1





*Revised  
11-1-1919*

*Issue with  
Hearings*

# ARMY APPROPRIATION BILL

1920



## PAY OF THE ARMY

FISCAL YEAR 1919-20

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Printed for the use of the Committee on Military Affairs of the House

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PART 1

WASHINGTON  
GOVERNMENT PRINTING OFFICE

1919

589562

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**ESTIMATES FOR**  
**“PAY OF THE ARMY, FISCAL YEAR 1920”**

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**Pay of an army of 500,000 strength, estimated upon prewar scale of pay,  
segregated in grades and classes of service and showing total cost.**



## ESTIMATE FOR "PAY OF THE ARMY, FISCAL YEAR 1920."

Pay of officers of the line.....	\$36,910,264.00
Additional pay for length of service.....	2,072,640.00
Pay of officers of the Officers' Reserve Corps.....	3,000,000.00
Pay of officers of the National Guard.....	3,000,000.00
Pay of warrant officers, Army Mine Planter service.....	107,880.00
Additional pay for length of service.....	10,788.00
Pay of enlisted men of the line.....	79,384,164.00
Additional pay for length of service.....	3,454,490.00
Pay of enlisted men of the Regular Army Reserve.....	290,000.00
Pay of enlisted men of the Enlisted Reserve Corps.....	100,000.00
Pay of enlisted men, National Guard.....	10,000,000.00
Pay of enlisted men, Ordnance Department.....	4,560,000.00
Additional pay for length of service.....	200,000.00
Pay of enlisted men of the Quartermaster Corps.....	9,120,000.00
Additional pay for length of service.....	400,000.00
Pay of enlisted men of the Signal Corps.....	13,848,492.00
Additional pay for length of service.....	607,390.00
Aviation increase.....	10,000.00
Pay of enlisted men of the Medical Department.....	7,843,536.00
Additional pay for length of service.....	338,120.00
Pay of clerks, messengers, and laborers, office of the Chief of Staff:	
1 chief clerk, at \$2,500 per annum.....	2,500.00
1 assistant chief clerk, at \$2,400 per annum.....	2,400.00
5 clerks, at \$2,250 per annum each.....	11,250.00
6 clerks, at \$2,000 per annum each.....	12,000.00
8 clerks, at \$1,800 per annum each.....	14,400.00
13 clerks, at \$1,600 per annum each.....	20,800.00
21 clerks, at \$1,400 per annum each.....	29,400.00
24 clerks, at \$1,200 per annum each.....	28,800.00
26 clerks, at \$1,000 per annum each.....	26,000.00
1 captain of the watch, at \$900 per annum.....	900.00
6 watchmen, at \$720 each per annum.....	4,320.00
1 gardner, at \$720 per annum.....	720.00
1 packer, at \$840 per annum.....	840.00
1 chief messenger, at \$1,000 per annum.....	1,000.00
3 messengers, at \$840 each per annum.....	2,520.00
15 messengers, at \$720 each per annum.....	10,800.00
2 laborers, at \$720 each per annum.....	1,440.00
1 laborer, at \$600 per annum.....	600.00
5 charwomen, at \$240 each per annum.....	1,200.00
Pay of clerks and messengers at headquarters of the several territorial departments, territorial districts, tactical divisions and brigades, and service schools:	
40 clerks, at \$1,200 each per annum.....	80,000.00
100 clerks, at \$1,800 each per annum.....	180,000.00
190 clerks, at \$1,600 each per annum.....	304,000.00
270 clerks, at \$1,400 each per annum.....	378,000.00
600 clerks, at \$1,200 each per annum.....	720,000.00
125 messengers, at \$720 each per annum.....	90,000.00
Additional pay while on foreign service.....	8,000.00
Commutation of quarters and of heat and light to Army field clerks..	23,040.00
Commutation of quarters and of heat and light to field clerks, Quartermaster Corps.....	76,800.00
Pay of officers of the General Staff Corps.....	613,319.00
Additional pay for length of service.....	34,440.00
Pay of officers of the Adjutant General's Department.....	711,621.00
Additional pay for length of service.....	9,960.00
Pay of officers of the Corps of Engineers.....	2,829,388.00
Additional pay for length of service.....	158,880.00
Pay of officers of the Ordnance Department.....	3,632,900.00
Additional pay for length of service.....	204,000.00
Pay of officers of the Quartermaster Corps.....	2,795,196.00
Additional pay for length of service.....	156,960.00

Pay of officers of the Medical Department.....	\$10,962,810.00
Additional pay for length of service.....	615,600.00
Pay of reserve veterinarians.....	788,800.00
Pay of contract surgeons.....	90,000.00
Pay of nurses.....	1,712,580.00
Pay of officers of the Judge Advocate General's Department.....	395,345.00
Additional pay for length of service.....	22,200.00
Pay of officers of the Signal Corps.....	9,657,103.00
Aviation increase.....	1,000,000.00
Additional pay for length of service.....	542,280.00
Pay of officers of the Bureau of Insular Affairs.....	15,000.00
Additional pay for length of service.....	2,000.00
Pay of officers of the retired list.....	2,788,650.00
Additional pay for length of service.....	530,535.00
Pay of retired Philippine Scout officers.....	54,000.00
Pay of retired veterinarians.....	3,570.00
Pay of retired pay clerks.....	18,562.50
Increased pay to retired officers on active duty.....	229,760.00
Additional pay for length of service.....	71,650.00
Pay of retired enlisted men.....	3,404,844.00
Pay and allowances of retired enlisted men on active duty.....	25,000.00
Pay and allowances of Regular Army Reservists on active duty.....	50,000.00
Pay of hospital matrons.....	3,600.00
Expenses of courts-martial.....	500,000.00
Additional pay to officer in charge of public buildings, Washington, D. C.....	500.00
Commutation of quarters and of heat and light to commissioned officers, members of the Nurse Corps, and enlisted men on duty at places where no quarters are available.....	4,821,150.00
Interest on soldiers' deposits.....	150,000.00
Pay of expert accountant, Inspector General's Department.....	2,500.00
Extra pay to enlisted men seacoast defenses.....	25,000.00
Extra pay to enlisted men as switchboard operators at interior posts..	19,215.00
Extra pay to enlisted men employed on the Washington-Alaska Cable & Telegraph Co.....	38,430.00
Mileage.....	3,150,000.00
Ten per cent increase to officers on foreign service.....	250,000.00
Twenty per cent increase to enlisted men on foreign service.....	800,000.00
Pay of computer for Artillery Board.....	2,500.00
Payment of exchange.....	1,000.00
Additional pay for mounts.....	300,000.00
Jennie Carroll.....	1,500.00
Mabel H. Lazear.....	1,500.00
John R. Kissinger.....	1,200.00
Pay of officers of the Philippine Scouts.....	624,004.00
Additional pay for length of service.....	35,040.00
Pay of enlisted men—Philippine Scouts.....	1,326,648.00
Additional pay for length of service.....	55,126.00
<b>Total.....</b>	<b>233,742,691.50</b>
Mileage.....	3,150,000.00

**Total, "Pay of the Army"..... 230,592,691.50**

If the increase in the rates of pay authorized by the act of May 18, 1917, becomes permanent the additional cost will be as follows:

	Number of enlisted men.	Per capita annual cost.	Amount.
Line of the Army.....	345,449	\$169.28	\$58,477,606.72
Ordnance Department.....	20,000	169.28	3,385,600.00
Quartermaster Corps.....	40,000	169.28	6,771,200.00
Signal Corps.....	60,739	169.28	10,281,897.92
Medical Department.....	33,812	169.28	5,723,695.36
	500,000		84,640,000.00
Retired enlisted men.....	4,490	126.96	570,050.40
20 per cent increase, foreign service.....	16,860	33.856	570,812.16
<b>Total.....</b>			<b>85,780,862.56</b>





## INFANTRY DIVISION.

Units.	Division head-quarters.	Two infantry brigades.	One field artillery brigade.	One machine-gun battalion.	One regiment Engineers.	One field signal battalion.	Train head-quarters and military police.	Ammunition train.	Supply train.
Major generals.....	1								
Brigadier generals.....		2	1						
Colonels.....	1	4	3		1		1		
Lieutenant colonels.....	11	4	3		1			1	
Majors.....	8	20	11	1	3	1	1	3	1
Captains.....	8	104	48	2	13	4	5	14	7
1st lieutenants.....	12	236	80	7	21	6	4	12	8
2d lieutenants.....	5	154	74	6	12	4	4	8	
Total commissioned.....	46	524	220	16	51	15	15	38	16
Regimental sergeants major.....	5	10	7		2		1	2	
Hospital sergeant.....	1								
Master engineer, senior grade.....					6				
Master engineer, junior grade.....					12				
Ordnance sergeants.....	1	4	6		1		1	10	
Quartermaster sergeants.....									2
Regimental supply sergeants.....		12	7		2			4	
Battalion sergeants major.....	8	16	7	2	2		2	2	
Battalion supply sergeant, Engineers.....									
First sergeants.....	1	68	26	2	7		2	7	
Sergeant, first class.....	14	6	3	1	41	33	1	1	8
Master signal electrician.....						6			
Color sergeant.....		8	6		2				
Mess sergeant.....	2	68	25	2	7		2	7	
Supply sergeant.....	1	80	25	2	7		2	9	
Stable sergeant.....	1	22	16		8		2	3	
Sergeant, staff.....		20	13	2	95	46	3	18	40
Sergeant, line.....	28	786	230	24			17	65	
Corporal, staff.....		4	11		252	82	3	15	194
Corporal, line.....	16	1,924	571	29			34	144	
Cooks.....	5	286	106	9	35	9	9	26	13
Horseshoers.....	2	36	47		8	4	7	9	
Mechanics.....	2	264	79	6	3		4	6	
Saddlers.....	1	20	26		7		2	3	
Wagoners.....	20	420	271	43	57		11	188	
Buglers.....	2	120	67	4	14		4	15	
Farriers.....		4	8				8		
Chauffeurs, first class.....						2			
Chauffeurs.....						11			
Chief mechanics.....			28					7	
Privates, first class.....	38	4,080	1,036	88	367	94	82	309	76
Privates.....	78	7,968	2,064	163	710	186	162	445	152
Band leader.....		4	3						
Assistant band leader.....		4	3						
Sergeant bugler.....		4	3		1				
Band sergeant.....		16	12						
Band corporal.....		24	18						
Musicians, first class.....		24	18						
Musicians, second class.....		40	30						
Musicians, third class.....		80	60						
Service increase.....									
Total enlisted.....	226	16,422	4,832	377	1,646	473	359	1,295	485
Aggregate.....	272	16,948	5,052	393	1,697	488	374	1,333	501

## REMARKS.

## OFFICERS.

\$2,123,700÷994=\$2,136.52, average annual base pay of officers.

\$118,960÷994=\$119.68, average annual service pay of officers.

\$2,466,926÷994=\$2,481.82, average annual pay, including base pay, service increase, and foreign service.

INFANTRY DIVISION.

Engi- neers train.	Sani- tary train.	Total.	Annual base pay.	Total base pay.	Total service increase.	Foreign- service increase.	Increase un- der act May 18, 1917.	Total.
		1	\$8,000.00	\$8,000.00		\$800.00		\$8,800
		3	6,000.00	18,000.00		1,800.00		19,800
		10	4,000.00	40,000.00	\$10,000.00	5,000.00		55,000
	1	21	3,500.00	73,500.00	21,000.00	9,450.00		103,950
	6	55	3,000.00	185,000.00	33,000.00	19,800.00		217,800
	24	229	2,400.00	549,600.00	54,960.00	60,456.00		665,016
1	20	407	2,000.00	814,000.00		81,400.00		895,400
1		268	1,700.00	455,600.00		45,560.00		501,160
2	51	994		2,123,700.00	118,960.00	224,268.00		2,466,928
		27	540.00	14,580.00		2,916.00	\$1,944.00	19,440
		1	780.00	780.00		156.00	72.00	1,008
		6	900.00	5,400.00		1,080.00	432.00	6,912
		12	780.00	9,360.00		1,872.00	864.00	12,096
		23	540.00	12,420.00		2,484.00	1,656.00	16,560
		2	540.00	1,080.00		216.00	144.00	1,440
		25	540.00	13,500.00		2,700.00	1,800.00	18,000
		39	480.00	18,720.00		3,744.00	3,744.00	26,208
1		114	540.00	61,560.00		12,312.00	8,208.00	82,080
	22	130	540.00	70,200.00		14,040.00	9,360.00	93,600
		6	900.00	5,400.00		1,080.00	432.00	6,912
		16	432.00	6,912.00		1,382.00	1,536.00	9,830
1		114	360.00	41,040.00		8,208.00	10,944.00	60,192
1		127	360.00	45,720.00		9,144.00	12,192.00	67,056
1		53	360.00	19,080.00		3,816.00	5,088.00	27,984
	83	320	432.00	138,240.00		27,648.00	30,720.00	196,608
		1,150	360.00	414,000.00		82,800.00	110,400.00	607,200
4	36	601	288.00	173,088.00		34,617.00	86,544.00	294,249
		2,718	252.00	684,936.00		136,987.00	489,240.00	1,311,163
2	22	522	360.00	187,920.00		37,584.00	50,112.00	275,616
2	3	118	360.00	42,480.00		8,496.00	11,328.00	62,304
	8	372	252.00	93,744.00		18,748.00	66,960.00	179,452
1	2	62	252.00	15,624.00		3,124.00	11,160.00	29,908
35	123	1,171	252.00	295,092.00		59,018.00	210,780.00	564,880
1		227	180.00	40,860.00		8,172.00	40,860.00	89,892
	2	22	252.00	5,544.00		1,108.00	3,960.00	10,612
		2	540.00	1,080.00		216.00	144.00	1,440
		11	432.00	4,752.00		950.00	1,056.00	6,758
		35	288.00	10,080.00		2,016.00	5,040.00	17,136
10	200	6,380	216.00	1,378,080.00		275,616.00	1,148,400.00	2,802,096
20	399	12,347	180.00	2,222,460.00		444,492.00	2,222,460.00	4,889,412
		7	900.00	6,300.00		1,260.00	504.00	8,064
		7	480.00	3,360.00		672.00	672.00	4,704
		8	480.00	3,840.00		768.00	768.00	5,376
		28	432.00	12,096.00		2,419.00	2,688.00	17,203
		42	360.00	15,120.00		3,024.00	4,032.00	22,176
		42	432.00	18,144.00		3,628.00	4,032.00	25,804
		70	360.00	25,200.00		5,040.00	6,720.00	36,960
		140	288.00	40,320.00		8,064.00	20,160.00	68,544
					270,970.00	54,194.00		325,164
82	900	27,097		6,158,112.00	270,970.00	1,285,811.00	4,587,156.00	12,302,049
84	951	28,091		8,281,812.00	389,930.00	1,510,077.00	4,587,156.00	14,768,975

ENLISTED MEN.

\$6,158,112÷27,097=\$227.2, average annual base pay of enlisted men.  
\$4,587,156÷27,097=\$169.2, average pay of enlisted men under act of May 18, 1917.  
\$12,302,049÷27,097=\$454, average total pay of enlisted men, including increase under act of May 18, 1917, foreign-service increase, and additional pay for length of service.  
NOTE.—In computing service pay of officers, it is assumed that lieutenants have had no service, captains 5 years, majors 10 years, and lieutenant colonels and colonels 15 years of service.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.      *Item name:* Pay of officers of the line.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	17, 272	\$2,137 per annum .....	\$36, 910. 264
Reserves.....			
154, 551			
345, 449			

500, 000 divided by 20 equals 17,272 officers, assumed to be 1 in 20.      See Chart "A."

Total requirements:

Deductions:		
Estimated quantity on hand July 1, 1919.....		
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$36, 910. 264

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Average per capita cost Infantry division.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act June 3, 1916, vol. 39, p. 166; establishing pay of officers of the line.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Enlisted men of the line, 345,449. On a basis of 1 officer to 20 enlisted men there will be required 17,272 officers; 345,449 divided by 20 equals 17,272.

5. REMARKS:

Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Additional pay for length of service to officers of the line.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	17,272	\$120 per annum.....	\$2,072,640
Reserves.....			
Total requirements .....			\$2,072,640

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$2,072,640

\*"Working basis" is the quantity required per man or per unit for stated period ; or other factor used in arriving at the REQUIRMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
In computing service pay of officers it is assumed that lieutenants have had no service; captains 5 years; majors 10 years; and lieutenant colonels and colonels 15 years.  
The average annual cost on this basis is \$120.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Acts of May 11, 1908, and June 3, 1916, establishing statutory rates of pay.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:

Date.....      Checked by.....      Estimate made by J. M.

(For additional space, use additional sheets of this size.)

	Number of—	
	Officers.	Men.
Line.....	17,272	345,449
Ordnance Department.....	1,700	20,000
Signal Corps.....	4,519	60,739
Quartermaster Corps.....	1,308	40,000
Medical Department.....	5,130	33,812
General Staff.....	287	
Adjutant General's Office.....	333	
Inspector General's Office.....	83	
Corps of Engineers.....	1,324	
Judge Advocate General's Office.....	185	
Total.....	32,141	500,000

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Officers Reserve Corps—Pay of Officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	Same estimate as 1918.....		\$3,000,000.00
Reserves.....	Although number of reserve officers will probably be materially increased, this amount is deemed sufficient.		

Total requirements:

Deductions:		
Estimated quantity on hand July 1, 1919.....		
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$3,000,000.00

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, creating Reserve Corps.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: National Guard—Pay of Officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	Same estimate as 1918 .....		\$3, 000, 000. 00
Reserves.....	No basis or data available and new status not established.		.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....	.....	.....
\$	Total deductions.....	.....	.....
	Net requirements.....	.....	.....
	Total cost of net requirements.....		\$3, 000, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, establishing statutory pay.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

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ARMY APPROPRIATION BILL, 1920.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Army Mine Planter Service—Pay of warrant officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	75	See remarks.....	\$107, 880. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
			\$107, 880. 00

\*“Working basis” is the quantity required per man or per unit for stated period. or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act July 9, 1918, creating Mine Planter Service, and establishing rates of pay.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5 REMARKS:

15 masters, \$1,800.....	\$27, 000. 00
15 first mates, at \$1,520.....	22, 880. 00
15 second mates, at \$972.....	14, 580. 00
15 chief engineers, at \$1,700.....	25, 500. 00
15 assistant engineers, at \$1,200.....	18, 000. 00
	107, 880. 00

Date.....

Checked by.....

Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Army Mine Planter Service—Additional pay for length of service to warrant officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	75	10% of pay of warrant officers: \$107,880×10 =\$10,780.00.	\$10,788. 00
Reserves.....			

Total requirements:

Deductions:		
	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$10,788. 00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
It is estimated that each warrant officer has had an average of 5 years service in the Army, which entitles him to 10 per cent increase in pay.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act July 9, 1918. establishing rate.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

WAR DEPARTMENT,  
OFFICE OF THE CHIEF OF COAST ARTILLERY,  
Washington, November 6, 1918.

In reply refer to 245.81.  
Memorandum for the Chief of Staff.  
Subject: Allowances for warrant officers, Army Mine Planter Service.  
1. On August 14 our fifth indorsement to The Adjutant General of the Army, with reference to the above subject, requested information

as to the appointment of warrant officers, Army Mine Planter Service, and also requested that their allowances be prescribed in accordance with the act of Congress, approved July 9, 1918, which authorized the Secretary of War to prescribe certain allowances for warrant officers in the Army Mine Planter Service.

2. In the seventh indorsement (War Department, A. G. O. 246. Warrant Officers, Misc. Div.), dated September 24, authorization was granted with reference to the appointment of warrant officers, Army Mine Planter Service, but to date no information has been received concerning the allowances of warrant officers.

3. It is recommended that the approval of the Secretary of War be obtained for the following allowances for all warrant officers in the Army Mine Planter Service:

(a) Quarters, fuel, and light, or commutation therefor, as prescribed by Army Regulations, 1913, for a second lieutenant.

(b) Clothing, as authorized for enlisted men.

(c) Baggage, allowance upon change of station, as prescribed by Army Regulations, 1913, for a second lieutenant.

(d) Travel allowances, as prescribed by Army Regulations, 1913, for a commissioned officer in the Army. A subsistence allowance of 65 cents per day was authorized in seventh indorsement, A. G. 246.4 (Misc. Div.), dated July 11, 1918.

4. It is urgent that these allowances be prescribed, as a number of the present civilian crews who are eligible for appointments as warrant officers will not accept such an appointment until they are informed as to just what allowances they will receive.

(Signed) F. W. COE,  
*Major General, Chief of Coast Artillery.*

246 (Warrant officer.)

War Department, A. G. O., November 11, 1918. To the Chief of Coast Artillery:

The allowances recommended in paragraph 3 of this letter are approved.

By order of the Secretary of War:

(Signed) J. W. RILEY, *Adjutant General.*

AG 320.2 -ADM

WAR DEPARTMENT,  
THE ADJUTANT GENERAL'S OFFICE,  
*August 28, 1918.*

From: The Adjutant General of the Army.

To: The Acting Quartermaster General of the Army.

Subject: Strength of the Army.

Referring to the letter of the assistant to the Acting Quartermaster General—Finance (No. 320.2-FA-OS) -of the 26th instant, the

strength of the Army on July 1, 1915, July 1, 1916, July 1, 1917, and July 1, 1918, was as shown below:

	Officers.	Enlisted men.
July 1, 1915:		
Regular Army.....	4,616	<sup>1</sup> 95,765
Philippine Scouts.....	182	5,430
July 1, 1916:		
Regular Army.....	4,843	<sup>1</sup> 97,013
Philippine Scouts.....	182	5,603
National Guard (Federal service).....	3,511	80,610
July 1, 1917:		
Regular Army.....	6,169	<sup>1</sup> 238,455
Philippine Scouts.....	163	5,570
National Guard (Federal service).....	3,803	107,320
July 1, 1918: <sup>2</sup>		
Regular Army.....	<sup>3</sup> 11,363	<sup>3</sup> 516,661
Philippine Scouts.....	168	5,495
National Guard.....	<sup>3</sup> 16,978	<sup>3</sup> 417,413
Reserve Corps.....	<sup>3</sup> 134,356	<sup>4</sup> 78,567
National Army.....		1,177,279

<sup>1</sup> Includes enlisted strength of the Medical Department and Quartermaster Corps.  
<sup>2</sup> Officers, exclusive of Philippine Scouts, 162,697; enlisted men, exclusive of Philippine Scouts, 2,189,913.  
<sup>3</sup> Approximation.  
<sup>4</sup> Includes both Reserve Corps and National Army officers.

P. C. HARRIS,  
*Acting The Adjutant General.*

The commissioned personnel, including staff department, of the Regular Army on July 1, 1916, consisted of 4,843 officers; July 1, 1917, consisted of 6,169 officers.

During this period the following amounts were paid for service pay:

Line.....	\$2,003,834.77
Engineers.....	127,083.07
Ordnance.....	56,428.02
Quartermaster Corps.....	205,871.06
Signal.....	55,051.50
Medical.....	266,634.29
Adjutant General.....	24,695.92
Inspector General.....	17,620.05
Judge Advocate General.....	16,150.15
	2,773,368.83
Per capita cost.....	503.70

	Number of—	
	Officers.	Men.
Line.....	17,272	345,449
Ordnance Department.....	1,700	21,000
Quartermaster Corps.....	1,308	40,000
Signal Corps.....	4,519	60,739
Medical Department.....	5,130	33,812
General Staff.....	287	
Adjutant General's Department.....	333	
Inspector General's Office.....	83	
Corps of Engineers.....	1,324	
Judge Advocate General's Office.....	185	
	32,141	500,000

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.      *Item name:* Pay of enlisted men of the line.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	345, 449	\$228 per annum.....	\$78, 762, 372. 00
Reserves.....	17, 272	\$36 per annum.....	621, 792. 00
Total requirements .....			\$79, 384, 164. 00

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$79, 384, 164. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Average per capita cost Infantry division.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act June 3, 1916, vol. 39, p. 186.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

It is estimated that 5 per cent of enlisted men will qualify in marksmanship and other ratings carrying additional pay.

## 5. REMARKS:

Five per cent of 345.449 equals 17,272, at an average of \$3 per month or \$36 per annum.

Date.....      Checked by.....      Estimate made by W. F. B.  
(For additional space, use additional sheets of this size.)



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Enlisted men of the line—Additional pay for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	345,449	\$10 per annum.....	\$3,454,490.00
Reserves.....			

Total requirements..... \$3,454,490.00

Deductions:	
Estimated quantity on hand July 1, 1919.....	
COST BASIS: Estimated salvage and reclamation.....	
\$ Total deductions.....	
Net requirements.....	
Total cost of net requirements.....	\$3,454,490.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIRMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated average per capita cost.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act May 11, 1908, vol. 35, p. 109.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date..... Checked by..... Estimate made by J. M.

(For additional space, use additional sheets of this size.)

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No.....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.      *Item name:* Regular Army Reserves—Pay of enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	\$290,000.00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....	.....	.....
\$	Total deductions.....	.....	.....
	Net requirements.....	.....	.....
	Total cost of net requirements.....	.....	\$290,000.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Amount appropriated fiscal year 1918, \$290,000.00.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 188.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Same amount as appropriation for 1918.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No.....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Enlisted Reserve Corps—Pay of enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	\$100,000.00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:		
Estimated quantity on hand July 1, 1919.....		
COST BASIS:	Estimated salvage and reclamation.....	.....
\$	Total deductions.....	.....
	Net requirements.....	.....
	Total cost of net requirements.....	\$100,000.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Amount appropriated fiscal year 1918, \$100,000.00.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 188.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Same as appropriation for 1918.

Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Pay of enlisted men—National Guard.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	\$10,000,000.00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....	.....	.....
\$	Total deductions.....	.....	.....
	Net requirements.....	.....	.....
	Total cost of net requirements.....	.....	\$10,000,000.00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIRMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Appropriated fiscal year 1918, \$10,000,000.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 188.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

Same as 1918 appropriation.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

PAY FOR LENGTH OF SERVICE (ENLISTED MEN).

Statement showing per capita cost for “Pay for length of service” to enlisted men, as provided for in Army appropriation bill, fiscal year 1919, approved July 9, 1918:

	Number of enlisted men provided for in act July 9, 1918.	Amount appropriated for “Pay for length of service.”	Per capita cost.
Line of the Army.....	1,964,376	\$8,520,000	\$4.3373
Ordnance Department.....	66,324	180,000	2.714
Quartermaster Corps.....	195,530	350,000	1.79
Signal Corps, including Aviation.....	184,865	150,000	8.114
Medical Department.....	189,465	360,000	1.90
	2,600,500	9,560,000	.....

The amount appropriated for fiscal year 1919 (approved July 9, 1918) was \$9,560,000 for an army of 2,600,500 men (line and staff), or an annual per capita cost of \$3.68.

This probably covered some 2,000,000 men with no service pay, and as the Army for 1920, greatly reduced in size, will be composed of men with greater average length of service, it is reasonable to assume that \$10 per annum per man will be a close and conservative allowance.

The Regular Army, including the enlisted strength of the Medical Department and Quartermaster Corps on July 1, 1916, consisted of 97,013 enlisted men; July 1, 1917, consisted of 238,456 enlisted men.

During this period there were paid the following amounts for service pay:

Line.....	\$2, 518, 637. 14
Disciplinary Companies.....	20, 903. 78
Army Service Schools.....	51, 320. 73
Engineers.....	76, 859. 43
Ordnance Corps.....	109, 386. 16
Quartermaster Corps.....	343, 418. 37
Signal Corps.....	89, 797. 91
Aviators.....	2, 590. 64
Medical Department.....	234, 272. 84
Adjutant General's Department.	
Inspector General's Department.	
Judge Advocate General's Department.	
General Staff (inc. in line).	
Per capita cost.....	20. 50
Appropriated fiscal year, \$2,300,000.	

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army. Item name: Ordnance Department—Pay of enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	20, 000	\$228. 00 per annum.....	\$4, 560, 000. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$4, 560, 000. 00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average per capita cost, Infantry division.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act of June 3, 1916, vol. 39, p. 188.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Number of enlisted men obtained from Office of Chief of Ordnance.

Date..... Checked by..... Estimate made by.....  
(For additional space use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3-FE  
The Director of Finance.  
Chief of Ordnance, Washington, D. C.  
Revised estimate, fiscal year 1920.

1. For use in the preparation of the revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the number of enlisted men of the Ordnance Department, for whom it is desired that provision be made, based on the assumption that the Army will consist of 500,000 enlisted men in the United States and its insular possessions, organized as provided by the act of June 3, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JAMES MACKAY,  
*Major, Quartermaster Corps.*

JM/MAM

[1st ind.]

L. E. 326.12

Ordnance Office, Administration Division, Enlisted Personnel Section, Nov. 23, 1918. To Board established under Office Order 389 (attention Major W. A. Borden).

1. Forwarded, for consideration.

By direction of Colonel Tschappat:

W. H. BURNHAM,  
*Captain, Ordnance Department, U. S. A.*

DECEMBER 3, 1918.

Memorandum for Major Borden (Aircraft Armament, Engineering Division).

1. With reference to letter from the Director of Finance, dated November 20, 1918, subject "Revised estimate, fiscal year 1920," the following information is submitted, showing a requirement of twenty thousand enlisted men of the Ordnance Department for whom provision should be made in the preparation of revised estimates for pay of the Army for the fiscal year 1920.

2. This figure has been estimated as follows:

Attached to line organizations of 1 army, 5 corps and 20 divisions, totaling 500,000 men.....	7,000
Coast defenses of the United States.....	250
Arsenals and proving grounds.....	4,500
Storage depots.....	600
Twenty Ordnance Armament Co.....	1,000
Twenty Ordnance Ammunition Supply Co.....	4,320
	<hr/>
	17,670
10 per cent for training and replacement.....	1,767
	<hr/>
	19,437
	<hr/>
	20,000

3. In submitting figures for estimates in the past, it has not been required that this figure be distributed in grades, but if grades are desired, they should be distributed as follows, provided that the necessary legislation is secured in the meantime:

Ordnance sergeants, S. G.....	400
Ordnance sergeants.....	2,400
Sergeants, first class.....	400
Sergeants.....	2,000
Corporals.....	3,600
Cooks.....	400
Privates, first class.....	3,600
Privates.....	7,200
	<hr/>
	20,000

For and in the absence of Colonel James L. Walsh:

F. A. ROGERS,  
*Major, Ordnance Dept., U. S. A.*

[2nd ind.]

L. E. 000.71/3050

L. E. 326.12

WAB/ges

From: Board established under Officer Order No. 389 (Room H-239, "E" Bldg.).

12/4/18—To: Ordnance Office, Administration Div., Enlisted Personnel Section.

1. The estimate of 20,000 enlisted men as prepared by Major Rogers in accordance with the memorandum attached is approved. It is understood that this information has already been referred to the Director of Finance.

W. W. GIBSON,  
*Colonel, Ord. Dept., U. S. A., President.*

By WM. A. NORDEN,  
*Major, Ord. Dept., U. S. A., Recorder.*

Attached: 2 page Memo. (326.22/12).

WCN/ram

[3d ind.]

L. E. 326.12

Ordnance Office, December 5, 1918. To Director of Finance.  
Munitions Bldg., Washington, D. C.

1. Forwarded:

C. C. WILLIAMS,  
*Major General, Chief of Ordnance, U. S. A.*

By W. H. BURNHAM,  
*Captain, Ordnance Department, U. S. A.*

Inc.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army. *Item name:* Ordnance Department—Additional pay for length of service of enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	20,000	\$10.00 per annum .....	\$200,000.00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
			\$200,000.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated average per capita cost.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35. p. 109.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:  
Number of enlisted men obtained from Office Chief of Ordnance.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army. Item name: Quartermaster Corps—Pay of enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	40,000	\$228.00 per annum .....	\$9,120,000.00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
\$			\$9,120,000.00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average per capita cost, Infantry division.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 150.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
Number of enlisted men obtained from Office Acting Quartermaster General.

Date..... Checked by..... Estimate made by.....  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Item name: Quartermaster Corps—Additional pay for length of service of enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	40,000	\$10.00 per annum.....	\$400,000.00
Reserves.....			

Total requirements:

	Deductions:		
	Estimated quantity on hand July 1, 1919.....	.....	
COST BASIS:	Estimated salvage and reclamation.....	.....	
\$	Total deductions.....	.....	
	Net requirements.....	.....	
	Total cost of net requirements.....		\$400,000.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIRMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated average per capita cost.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, vol. 35, p. 109.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Number of enlisted men obtained from Office Acting Quartermaster General.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3-FE

The Director of Finance.

The Quartermaster General, Washington, D. C.

Revised estimate, fiscal year 1920.

1. For use in preparation of revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the number of enlisted men of the Quartermaster Corps for whom it is desired that

provision be made, based on the assumption that the Army will consist of 500,000 enlisted men in the United States and its insular possessions, organized as provided by the act of June 3, 1916.

2. It is requested that this information to be furnished with as little delay as practicable.

By authority of the Director of Finance,

JAMES MACKAY,  
*Major, Quartermaster Corps.*

JM/MAM

CWD/MAN

[1st ind.]

In reply refer to file No. 111.3-P-E

O. Q. M. G., Nov. 21, 1918. To the Director of Finance.

1. Returned. Based on the assumption that the enlisted strength of the Army will consist of 500,000 men, it is desired that provision be made for 40,000 enlisted men of the Quartermaster Corps.

By authority of the Acting Quartermaster General.

R. M. SCHOFIELD,  
*Colonel, Quartermaster Corps.*

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army. Item name: Signal Corps—Enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	60,739	\$228.00 per annum.....	\$13,848,492.00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
			\$13,848,492.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Average per capita cost Infantry division.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act June 3, 1916.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

	Men.
Signal Corps.....	20,000
Air Service.....	40,739
	<hr/> 60,739

5. REMARKS:

Date.....

Checked by.....

Estimate made by J. M.

(For additional space use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Signal Corps, enlisted men—Additional pay for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	60, 739	\$10. 00 per annum.....	\$607, 390. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
Cost BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
			\$607, 390. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated average per capita cost.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 109.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:
- Date.....      Checked by.....      Estimate made by J. M.
- (For additional space, use additional sheets of this size.)

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army. *Item name:* Signal Corps—Aviation increase to enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	\$10,000.00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....	.....	.....
\$	Total deductions.....	.....	.....
	Net requirements.....	.....	.....
	Total cost of net requirements.....	.....	\$10,000.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Amount paid under this item is negligible: no accurate data available.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3-FE

The Director of Finance.

The Chief Signal Officer, Washington, D. C.

Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the number of enlisted men of the Signal Corps for whom it is desired that provisions be made (additional amount required for aviation to be stated separately), based on the assumption that the Army will consist of 500,000 enlisted men in the United States and its insular possessions, organized as provided by the act of June 3, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance.

JAMES MACKAY,  
Major, Quartermaster Corps.

JM-MAM

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. ....  
PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army. Item name: Medical Department—Pay of enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	33, 812	\$288. 00 per annum.....	\$7, 709, 136. 00
Surgery assistants.....	1, 200	60. 00 per annum.....	72, 000. 00
Nurses.....	1, 000	36. 00 per annum.....	36, 000. 00
Disp. assistants.....	1, 100	24. 00 per annum.....	26, 400. 00

Total requirements..... \$7, 843, 536. 00

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
			\$7, 843, 536. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average per capita cost, Infantry division.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39. pp. 172, 186.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Number of enlisted men obtained from Surgeon General's Office.

Date..... Checked by..... Estimate made by.....  
(For additional space, use additional sheets of this size.)



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Medical Department—Additional pay for length of service of enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	33,812	\$10.00 per annum.....	\$338,120.00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
			\$333,120.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated average per capita cost.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act May 11, 1908, vol. 35, p. 109.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Number of enlisted men obtained from Surgeon General's Office.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.5-FE

The Director of Finance.  
The Surgeon General, Washington, D. C.  
Revised estimate, fiscal year 1920.

1. For use in the preparation of the revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the number of enlisted men of the Medical Department, for whom it is

desired that provisions be made, based on the assumption that the Army will consist of 500,000 enlisted men, in the United States and its insular possessions, organized as provided by the act of June 3, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JAMES MacKAY,  
*Major, Quartermaster Corps.*

JM/MZM

NOVEMBER 30, 1918.

From: The Surgeon General of the Army.  
To: The Director of Finance,  
    (Attention Major James MacKay, Q. M. C.).  
Subject: Revised estimate, fiscal year 1920.

Replying to request of November 20, 1918, for information regarding the number of enlisted men of the Medical Department for whom provisions should be made, based on the assumption that the Army will consist of 500,000 enlisted men in the United States and possessions, the following figures are submitted:

Medical Corps.....	25,000
Dental Corps.....	1,052
Veterinary Corps.....	7,760
Total.....	33,812

By direction of the Surgeon General:

R. B. MILLER,  
*Colonel, M. C., U. S. A.*

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Pay of clerks and messengers,  
Office Chief of Staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	See attached letter.....	\$171, 890. 00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
COST BASIS: \$	Estimated quantity on hand July 1, 1919.....	.....	
	Estimated salvage and reclamation.....	.....	
	Total deductions.....	.....	
	Net requirements.....	.....	
	Total cost of net requirements.....		\$171, 890. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

Data obtained from Assistant Chief of Staff.

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Pay of clerks and messengers,  
Department Headquarters, etc.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....		See attached letters ....	\$1, 752, 000. 00
Reserves.....			

Total requirements:

Deductions:		
Estimated quantity on hand July 1, 1919.....		
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$1, 752, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIRMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Letter Adjutant General. November 27, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:		
40 clerks, at \$2,000.....		\$80, 000
100 clerks, at \$1,800.....		180, 000
190 clerks, at \$1,600.....		304, 000
270 clerks, at \$1,400.....		378, 000
600 clerks, at \$1,200.....		720, 000
125 messengers, at \$720.....		90, 000
		1, 752, 000

5. REMARKS:

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Clerks—Additional pay while on foreign service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	40	\$200 per annum.....	\$8,000.00
Reserves.....			

Total requirements:

Deductions:			
COST BASIS: \$	Estimated quantity on hand July 1, 1919.....		
	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$8,000.00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Letter Adjutant General, November 27, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act July 9, 1918.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:*      *Item name:* Commutation of quarters and heat and light to Army field clerks.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	60	\$384 per annum.....	\$23, 040. 00
Reserves .....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$23, 040. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Letter Adjutant General, November 27, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act August 29, 1916.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.      *Item name:* Commutation of quarters to field clerks, Quartermasters Corps.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	200	\$384 per annum.....	\$76,800.00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$76,800.00

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Act August 29, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3-FEA 2

The Director of Finance.

The Adjutant General of the Army, Washington, D. C.

Revised estimate, fiscal year 1920.

1. For use in preparation of revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the amount required for pay clerks and messengers in the Office of the Chief of Staff based on the assumption that the Army will consist of 500,000 enlisted men, in the United States and its insular possessions, organized as provided by the act of June 3, 1918.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JAMES MACKAY,  
Major, Quartermaster Corps

[1st ind.]

JM/MAM

248. (Misc. Div.)

A. G. O., Nov. 22, 1918. To the Chief of Staff.

rlw/mis.

Memorandum for the Director of Finance:

Subject: Revised estimate, fiscal year 1920, pay of clerks and messengers in the office. Chief of Staff.

1. In reply to the attached communication, dated November 20, 1918, I am directed by the Chief of Staff to advise you that no change in the estimates already submitted for pay of clerks and messengers in his office deemed advisable at the present time.

2. The estimate formerly submitted is practically the same as that which met the conditions when the Army consisted of approximately 275,000 enlisted men and will therefore be conservative as it is reasonably certain that the work that will fall to the lot of the Office of the Chief of Staff with an Army of 500,000 men will require a considerable increase in clerical force. The number of such employees, however, that would be needed during the fiscal year 1920 for such an Army of 500,000 men is very problematical, and it is believed that the two estimates now in your possession will satisfactorily provide for the clerks and messengers needed by this office for fiscal year 1920.

FULTON Q. C. GARDNER,  
*Colonel, General Staff, Secretary.*

NOVEMBER 20, 1918.

111.3-FE

The Director of Finance.

The Adjutant General of the Army, Washington, D. C.

Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the amount required for pay of clerks and messengers in the Office of Chief of Staff, based on the assumption that the Army will consist of 500,000 enlisted men, in the United States and its insular possessions, organized as provided by the act of June 3, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JAMES MACKAY,  
*Major, Quartermaster Corps.*

[1st indorsement.]

JM/MAM

SEPT. 24, 1918.

Memorandum for the Quartermaster General:

The Secretary of War directs that the following be included in the estimate for the fiscal year ended June 30, 1920, for the pay of the civilian personnel of the Office of Chief of Staff:

1 chief, at \$2,500 per annum.....	\$2,500
1 assistant chief clerk, \$2,400 per annum (new).....	2,400
5 clerks, at \$2,250 per annum each (increase of 4 clerks of this grade).....	11,250
6 clerks, \$2,000 each per annum.....	12,000
8 clerks, \$1,800 each per annum.....	14,400



13 clerks, \$1,600 each per annum . . . . .	\$20,800
21 clerks, \$1,400 each per annum . . . . .	29,400
24 clerks, \$1,200 each per annum . . . . .	28,800
26 clerks, \$1,000 each per annum . . . . .	26,000
1 captain of the watch, \$900 per annum . . . . .	900
6 watchmen, at \$720 each per annum . . . . .	4,320
1 gardener, at \$720 per annum . . . . .	720
1 packer, \$840 per annum . . . . .	840
1 chief messenger, at \$1,000 . . . . .	1,000
3 messengers, at \$840 each per annum . . . . .	2,520
15 messengers, at \$720 each per annum . . . . .	10,800
2 laborers, at \$720 each per annum . . . . .	1,440
1 laborer, at \$600 each per annum . . . . .	600
5 charwomen, at \$240 each per annum . . . . .	1,200
Total appropriation . . . . .	171,890

(Signed) HENRY JERVEY,  
Brig. Gen., U. S. A., Asst. Chief of Staff.

NOVEMBER 20, 1918.

111.3-FE.  
The Director of Finance.  
The Adjutant General of the Army, Washington, D. C.  
Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the amount required for pay of clerks and messengers at headquarters of the several territorial departments, territorial districts, tactical divisions and brigades, and service schools, and the amount required for commutation of quarters for field clerks, based on the assumption that the Army will consist of 500,000 enlisted men, in the United States and its insular possessions, organized as provided by the act of June 30, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance.

JAMES MACKAY,  
Major, Quartermaster Corps.

JM:MAM NOVEMBER 27, 1918.  
Memorandum for the Director of Finance.

In response to your undated letter, requesting that a revised estimate of the number of Army field clerks and headquarters messengers that will be needed for the fiscal year 1920, based on the assumption that the Army will consist of 500,000 enlisted men in the United States and its insular possessions, organized as provided by the act of June 3, 1916, the following estimate is submitted:

ARMY FIELD CLERKS.

Salary grade per annum.	Number.	Amount.
\$2,000 . . . . .	40	\$80,000
\$1,800 . . . . .	100	180,000
\$1,600 . . . . .	190	304,000
\$1,400 . . . . .	270	378,000
\$1,200 . . . . .	600	720,000
Total . . . . .	1,200	1,662,000

## HEADQUARTERS MESSENGERS.

\$720.....	125	\$90,000
------------	-----	----------

Estimated amount of money for pay of Army field clerks.....	\$1,662,000
---	-------------

Estimated amount of money for pay of Army field clerks, foreign service pay (if no Army field clerks are on duty in Europe or Siberia during the fiscal year 1920 no money will be required under this item, with the exception of the amount of \$7,600 allowed to those Army field clerks on duty in the Philippine Department, the increase being \$200 per annum for each clerk).....	\$8,000
---	---------

Estimated amount of money for commutation of quarters, heat, and light, provided the present emergency passes before July 1, 1919, and Congress does not authorize commutation of quarters, heat, and light to Army field clerks, irrespective of length of service, there will be required only the amount to cover the commutation of quarters, heat, and light of about 60 Army field clerks—at approximately \$384 each per annum—who have rendered service as required by the act of August 29, 1916.....	23,040
--	--------

Estimated amount of money for pay for headquarters messengers.....	90,000
--	--------

By order of the Secretary of War:

P. C. HARRIS,  
*The Adjutant General.*

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: General Staff Corps—Pay of officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	287	\$2,137.00 per annum....	\$613,319.00
Reserves.....			

Total requirements:

Deductions:		
	Estimated quantity on hand July 1, 1919..	.....
COST BASIS:	Estimated salvage and reclamation.....	.....
\$	Total deductions.....	.....
	Net requirements.....	.....
	Total cost of net requirements.....	\$613, 319. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average per capita cost, Infantry division.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 173.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
See letter Assistant Chief of Staff, December 3, 1918.
- Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: General Staff Corps—Additional pay  
for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	287	\$120. 00 per annum.....	\$34, 440. 00
Reserves.....			

Total requirements:

Deductions:			
COST BASIS:	Estimated quantity on hand July 1, 1919..		
	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
\$	Total cost of net requirements.....		
			\$34, 440. 00

\*“Working basis” is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated average per capita cost.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908. vol. 35, p. 108.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
See letter Assistant Chief of Staff, December 3, 1918.

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3—FE  
The Director of Finance.  
The Adjutant General of the Army, Washington, D. C.  
Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the number of officers of the General Staff Corps, for whom it is desired that provisions be made, based on the assumption that the army will consist of 500,000 enlisted men in the United States and its insular possessions, organized as provided by the Act of June 3, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JAMES MACKAY.  
Major, Quartermaster Corps.

JM MAM

DECEMBER 3, 1918.

Memorandum for Director of Finance.

Subject: Revised estimate, fiscal year 1920, pay of officers, General Staff Corps.

1. In reply to your letter herewith addressed to The Adjutant General of the Army, November 20, 1918, the Chief of Staff directs that you be advised that approximately 287 officers will be needed for duty with the General Staff during the fiscal year ending June 30, 1920.

2. A mobile army of approximately 500,000 men according to Tables of Organization should have approximately 179 general staff officers attached to it as follows:

1 Army headquarters:		
Brigadier general	1	
Colonels	5	
Lieutenant colonels	6	
Majors	4	
Captains	3	
	19	
5 corps headquarters:		
Brigadier generals	3	
Colonels	14	
Lieutenant colonels	15	
Majors	28	
	60	
25 division headquarters:		
Colonels	25	
Lieutenant colonels	25	
Majors	25	
Captains	25	
	100	
	179	

3. It is estimated that approximately 108 General Staff officers will be required to conduct the affairs of the War Department, War College, and the various agencies, such as attachés, officers of Military Intelligence Division, etc.

4. The total of officers needed according to grades will be approximately as follows:

	Mobile army.	War Department, War College.	Total.
Brigadier generals	4	3	7
Colonels	44	27	71
Lieutenant colonels	46	26	72
Majors	57	36	93
Captains	28	16	44
			287

HENRY JERVEY,  
Major General, General Staff, Assistant Chief of Staff,  
Director of Operations.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.      *Item name:* Adjutant General's Department—  
Pay of officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	333	\$2, 137. 00 per annum...	\$711, 621. 00
Reserves.....			

Total requirements:

Deductions:			
COST BASIS: \$	Estimated quantity on hand July 1, 1919..		.....
	Estimated salvage and reclamation.....		.....
	Total deductions.....		.....
	Net requirements.....		.....
	Total cost of net requirements.....		\$711, 621. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average per capita cost, Infantry division.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

See letter A. G. O., Nov. 23, 1918.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Adjutant General's Department—  
Additional pay for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	333	\$120.00 per annum.....	\$39, 960. 00
Reserves.....			

Total requirements:

Deductions:			
COST BASIS: \$	Estimated quantity on hand July 1, 1919.. .. .		
	Estimated salvage and reclamation..... ..		
	Total deductions..... ..		
	Net requirements..... ..		
Total cost of net requirements..... ..			\$39, 960. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated average per capita cost.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 108.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

Date.....      Checked by.....      Estimate made by JM  
(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3-F. E.  
The Director of Finance.  
The Adjutant General of the Army, Washington, D. C.  
Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the number of officers of The Adjutant General's Department, for whom it is desired that provision be made, based on the assumption that the Army will consist of 500,000 enlisted men, in the United States and its insular possessions, organized as provided by the act of June 3, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JAMES MACKAY,  
Major, Quartermaster Corps.

JM-MAM

Estimate showing number of officers required for The Adjutant General's Department for army of 500,000.

	Adj. Gen. Office.	Divisions.	Brigade.	Territ. dept. posts.	Gen. h y Gen. Office.	Schools for Bakers and Cooks.	Schools for line staff.	School of Fire.	School of Small Arms.	C. A. C. Schools.	Recruit depots.	Pers. Adj't. C. A. C. Coast Defense Com.
Major general.....	1											
Brigadier generals.....	4											
Colonels.....	7			1	1	1						
Lieutenant colonels.....	12	1										
Majors.....	12	2	1	1	1	2					1	
Captains.....	1	2		2	1	10	1	1	1	1	2	20
First lieutenants.....						10	1	1	1	1		7
Second lieutenants.....						10						
Total.....	37	5	1	4	3	33	2	2	2	2	3	27
Total for units (aggregate, 333).....	37	100	60	36	12	33	4	2	2	2	18	27

	Major gen-eral.	Brigadier generals.	Colonels.	Lieutenant colonels.	Majors.	Captains.	First lieu-tenants.	Second lieu-tenants.	Total.		
	1	4	21	32	133	110	22	10	333		

This estimate based on an army of 500,000 consisting of: 20 combat divisions; 9 territorial departments; 10 Schools for Cooks and Bakers; 5 schools, staff and line; 35 officers for Adjutant General's Office, Washington, D. C.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Inspector General's Department—Pay of officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	83	\$2, 137.00 per annum...	\$177, 371.00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
			\$177, 371.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average per capita cost, Infantry division.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 169.

- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army. Item name: Inspector General's Department—  
Additional pay for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	83	\$120.00 per annum.....	\$9,960.00
Reserves.....			

Total requirements:

Deductions:			
COST BASIS:	Estimated quantity on hand July 1, 1919.....		
	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
\$	Total cost of net requirements.....		
			\$9,960.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated average per capita cost.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 108.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:
- Date..... Checked by..... Estimate made by.....  
(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3-FE  
The Director of Finance.  
The Inspector General, Washington, D. C.  
Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for the pay of the Army, for fiscal year 1920, information is requested as to the number of officers of the Inspector General's Department, for whom it is desired that provision be made, based on the assumption that the Army will consist of 500,000 enlisted men in the United States and its insular possessions, organized as provided by the act of June 3, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JM-MAM

JAMES MACKAY,  
*Major, Quartermaster Corps.*

[First indorsement.]

111.5-I. G. D. OMC  
War Department, O. I. G., Nov. 25, 1918. To Director of Finance.

1. Returned with revised estimate for fiscal year 1920, based on an Army of 500,000 enlisted, as follows:

Major generals.....	1
Brigadier generals.....	2
Colonels.....	14
Lieutenant colonels.....	36
Majors.....	20
Captains.....	4
First lieutenants.....	6
	<hr/>
	83

J. L. CHAMBERLAIN,  
*Inspector General.*

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.    Item name: Corps of Engineers—Pay of officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1,324	\$2,137 per annum.....	\$2,829,388
Reserves.....			

Total requirements:

Deductions:			
COST BASIS: \$	Estimated quantity on hand July 1, 1919..	.....	
	Estimated salvage and reclamation.....	.....	
	Total deductions.....	.....	
	Net requirements.....	.....	
	Total cost of net requirements.....		\$2,829,388

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average per capita cost, Infantry division.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 173.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Letter Office Chief of Engineers.

Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

Of the total of 2,699 Officers of the Corps of Engineers, it is estimated that 1,375 will be on duty with troops and therefore included in the item of “Pay of officers of the Line.” 2,699–1,375=1,324.

NOVEMBER 20, 1918.

111.3–FEA 2.  
The Director of Finance.  
The Chief of Engineers, Washington, D. C.  
Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for the pay of the Army for the fiscal year 1920, information is requested as to the number of officers of the Corps of Engineers for whom it is desired that provision be made, based on the assumption that the Army will

consist of 500,000 enlisted men, in the United States and its insular possessions, organized as provided by the act of June 3, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance.

JAMES MACKAY,  
*Major, Quartermaster Corps.*

JM-MAM.

[1st indorsement.]

111.3-E 101.

CFW:RIF.

NOVEMBER 29, 1918.

From: The Chief of Engineers.  
To: The Director of Finance, General Staff.  
Subject: Revised estimate, fiscal year 1920.

1. Reference to your letter of the 20th inst., on the above subject (File No. 111.3-FEA 2), requesting an estimate of the number of officers of the Corps of Engineers in the permanent establishment of 500,000 men.

2. The following numbers were recommended by this office to the War College as the proper quota of Engineer officers:

Major generals.....	1
Brigadier generals.....	5
Colonels.....	67
Lieutenant colonels.....	117
Majors.....	344
Captains.....	839
First lieutenants.....	865
Second lieutenants.....	461
Total.....	2,699

W. M. BLACK,  
*Major General.*  
By C. F. WILLIAMS,  
*Lt. Col., Engineers.*

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Corps of Engineers—Additional pay  
for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1, 324	\$120 per annum.....	\$158, 880
Reserves.....			

Total requirements:      /

Deductions:			
COST BASIS: \$	Estimated quantity on hand July 1, 1919..	.....	
	Estimated salvage and reclamation.....	.....	
	Total deductions.....	.....	
	Net requirements.....	.....	
	Total cost of net requirements.....		\$158, 880. 00

\* "Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated average per capita cost.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 108.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

Date.....      Checked by.....      Estimate made by.....

(For additional space use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Ordnance Department, Pay of officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1, 700	\$2, 137. 00 per annum...	\$3, 632, 900. 00
Reserves.....			

Total requirements:

Deductions:

Estimated quantity on hand July 1, 1919.....	
Cost BASIS: Estimated salvage and reclamation.....	
\$ Total cost of net requirements.....	\$3, 632, 900. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIRMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average per capita cost, Infantry division.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 174.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
Number of officers obtained from Office Chief of Ordnance.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Ordnance Department, Additional pay for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1, 700	\$120. 00 per annum.....	\$204, 000. 00
Reserves.....			

Total requirements:

Deductions:			
COST BASIS:	Estimated quantity on hand July 1, 1919.....		
	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
\$	Total cost of net requirements.....		
			\$204, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated average, per capita cost.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 108.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3-FEA 2.  
The Director of Finance.  
The Chief of Ordnance, Washington, D. C.  
Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the number of officers of the Ordnance Department for whom it is desired that provision be made, based on the assumption that the Army will consist of 500,000 enlisted men, in the United States and its insular possessions, organized as provided by the act of June 3, 1916.



2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JAMES MACKAY,  
*Major, Quartermaster Corps.*

[1st indorsement.]

Ordnance Office, Administration Division, November 25, 1918. To  
Director of Finance, Chief Purchase Storage and Traffic Division,  
General Staff.

1. From information available at this time it is estimated that seventeen hundred officers of the Ordnance Department will be required, on the assumption that the Army will consist of five hundred thousand enlisted men, and it is requested that provision be made for this number in the revised estimates for pay of the Army for fiscal year 1920.

C. C. WILLIAMS,  
*Major General, Chief of Ordnance, U. S. A.*

By W. W. GIBSON,  
*Colonel, Ordnance Department, U. S. A.*

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Quartermaster Corps—Pay of officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1, 308	\$2, 137 per annum.....	\$2, 795, 196. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
			\$2, 795, 196. 00

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average per capita cost, Infantry divisions.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 170.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Number of officers obtained from Quartermaster General's Office.

Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Quartermaster Corps—Additional pay for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1, 308	\$120. 00 per annum.....	\$156, 960. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$156, 960. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated average per capita cost.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 108.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:
- Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3-FFA 2.  
The Director of Finance.  
The Quartermaster General, Washington, D. C.  
Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for the pay of the Army for the fiscal year 1920, information is requested as to the number of officers of the Quartermaster Corps, for whom it is desired that provisions be made, based on the assumption that the Army will consist of 500,000 enlisted men, in the United States and its insular possessions, organized as provided by the act of June 3, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JAMES MACKAY.  
*Major, Quartermaster Corps.*

JM/MAM

NOVEMBER 22, 1918.

Memorandum for Office of Director of Finance  
(Attention Major James MacKay).

Returned. It is estimated that the following officers of the Quartermaster Corps will be needed for an Army of approximately 500,000 men:

Major general.....	1
Brigadier generals.....	5
Colonels.....	65
Lieutenant colonels.....	72
Majors.....	305
Captains.....	860
Total.....	1,308

R. M. SCHOFIELD,  
*Colonel, Quartermaster Corps,*  
*Assistant to Acting Quartermaster General.*

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Medical Department—Pay of officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	5, 130	\$2, 137. 00	\$10, 962, 810. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$10, 962, 810. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average per capita cost.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 171.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:
- Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Medical Department—Additional pay for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	5, 130	\$120. 00 per annum.....	\$615, 600. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
			\$615, 600. 00

\*“Working basis” is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated average, per capita cost.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 108.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

Date.....      Checked by.....      Estimate made by.....

(For additional space use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Medical Department—Pay of reserve veterinarians.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	464	\$1,700. 00	\$788,800. 00
Reserves.....			

Total requirements:

Deductions:		
Estimated quantity on hand July 1, 1919.....		
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$788,800. 00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Pay of a second lieutenant, statutory.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 108.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS: Number obtained from letter S. G. O., Nov. 30, 1918.  
Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:   Item name: Medical Department—Contract surgeon.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	50	\$1, 800	\$90, 000
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$90, 000

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Pay of contract surgeon, \$1, 800. 00 per annum.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Number obtained from Surgeon General's Office.

Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Medical Department—Pay of nurses.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	2, 250	See letter attached .....	\$1, 712, 580. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$1, 712, 580. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See letter attached.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:
- Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3-FEA 2  
The Director of Finance.  
The Surgeon General of the Army, Washington, D. C.  
Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for the pay of the Army for the fiscal year 1920, the following information is requested, based on the assumption that the Army will consist of 500,000 enlisted men, in the United States and its insular possessions, organized as provided by the act of June 3, 1916:
- (a) Number of officers of the Medical Department for whom it is desired that provision be made.
- (b) Number of reserve veterinarians for whom it is desired that provision be made.

(c) Number of contract surgeons for whom it is desired that provision be made.

(d) Statement showing number of nurses and rates of pay for whom it is desired that provision be made.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JM-MAM

JAMES MACKAY,  
*Major, Quartermaster Corps.*

NOVEMBER 30, 1918.

From: The Surgeon General of the Army.

To: The Director of Finance (attention Major James MacKay, Q. M. C.).

Subject: Revised estimate, fiscal year 1920.

Replying to the request of November 20, for information based on the assumption that the Army will consist of 50,000 enlisted men in the United States and insular possessions, the following figures are submitted:

(a) Number of officers in the Medical Department for whom it is desired provision be made:

Medical Corps:

Major general.....	1
Brigadier generals.....	7
Colonels.....	60
Lieutenant colonels.....	95
Majors.....	674
Captains.....	1,290
First lieutenants.....	1,373
Total.....	<u>3,500</u>

Sanitary Corps:

Majors.....	25
Captains.....	155
First lieutenants.....	160
Second lieutenants.....	160
Total.....	<u>500</u>

Dental Corps:

Colonels.....	31
Lieutenant colonels.....	54
Majors.....	230
Captains.....	342
First lieutenants.....	355
Total.....	<u>1,012</u>

Veterinary Corps:

Captains.....	25
First lieutenants.....	22
Second lieutenants.....	71
Total.....	<u>118</u>

(b) Number of reserve veterinarians for whom it is desired provision be made, 464, with pay and allowances of second lieutenant.

(c) Number of contract surgeons for whom it is desired provision be made, 50.

(d) Number of nurses and rates of pay: Number of nurses, 2,250: rates of pay (see memorandum).

By direction of the Surgeon General:

R. B. MILLER,  
Colonel, M. C., U. S. Army.  
det/eab

DECEMBER 2, 1918.

Memorandum for the Surgeon General:

In re estimate for the pay of the Army Nurse Corps for the fiscal year 1920, based on the assumption that the Army will consist of 500,000 enlisted men in the United States and its insular possessions.

Provision is to be made for a 4½ per cent bed capacity, 22,500 beds: 1 nurse to 10 patients, 2,250 nurses.

ESTIMATE.

	Per annum.
Base pay, 2,250 at.....	\$720
Foreign-service pay, 50 at.....	120
Chief nurse pay, 150 at.....	360
Service pay (over 3 years), 115 at.....	60
Service pay (over 6 years), 38 at.....	120
Service pay (over 9 years), 20 at.....	180
Service pay (over 12 years), 18 at.....	240
1 superintendent, A. N. C. ....	2,400
6 assistant superintendents.....	1,800

DORA E. THOMPSON,  
Superintendent, Army Nurse Corps.

MAM

W. H. SMITH,  
Colonel, Medical Corps.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army. Item name: Judge Advocate General's Department—Pay of officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	185	\$2, 137. 00	\$395, 345. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$395, 345. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average per capita cost.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1915, vol. 39, p. 169.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
Number of officers obtained from Judge Advocate General's Office.

Date..... Checked by..... Estimate made by.....  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: • Item name: Judge Advocate General's Department—Additional pay for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	185	\$120.00 per annum .....	\$22, 200. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
§	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$22, 200. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIRMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated average per capita cost.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35. p. 108.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Number of officers obtained from Judge Advocate General's Office.

Date.....

Checked by.....

Estimate made by.....

(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3-FE  
The Director of Finance.  
The Judge Advocate General, Washington, D. C.  
Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the number of officers of the Judge Advocate General's Department, for whom it is desired that provision be made, based on the assumption that the Army will consist of 500,000 enlisted men in the United

States and its insular possessions, organized as provided in the act of June 3, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JM MAM

JAMES MACKAY,  
*Major, Quartermaster Corps.*

NOVEMBER 20, 1918.

111.3-FEA 2

The Director of Finance.

The Chief Signal Officer, Washington, D. C.

Revised estimates, fiscal year 1920.

1. For use in the preparation of revised estimates for pay of the Army for the fiscal year 1920, information is requested as to the number of officers of the Signal Corps, for whom it is desired that provision be made (additional amount required for Aviation to be stated separately), based on the assumption that the Army will consist of 500,000 enlisted men in the United States and its insular possessions, organized as provided by the act of June 3, 1916.

2. It is requested that this information be furnished with as little delay as practicable.

By authority of the Director of Finance:

JAMES MACKAY,  
*Major, Quartermaster Corps.*

Number required:

Major general.....	1
Brigadier generals.....	2
Colonels.....	9
Lieutenant colonels.....	28
Majors.....	50
Captains.....	160
First lieutenants.....	237
Second lieutenants.....	112
<b>Total.....</b>	<b>599</b>

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:*      *Item name:* Signal Corps—Pay of Officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	4,519	\$2,137.00 per annum...	\$9,657,103.00
Reserves.....			

Total requirements:

**Deductions:**

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$9,657,103.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Average per capita cost, Infantry division.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act June 3, 1916, vol. 39, p. 174.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Signal Corps..... 599

Air Service..... 3,920

4,519

5. REMARKS:

Date.....

Checked by.....

Estimate made by J. M.

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Signal Corps—Increase to aviation officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	\$1,000,000.00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Cost BASIS: \$	Estimated quantity on hand July 1, 1919.....	.....	.....
	Estimated salvage and reclamation.....	.....	.....
	Total deductions.....	.....	.....
	Net requirements.....	.....	.....
	Total cost of net requirements.....	.....	\$1,000,000.00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See remarks.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 174.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
Appropriated fiscal year 1919, \$12,744,000. Estimate of Col. Gilmore, Bureau of Military Aeronautics, \$828,000.

Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army. *Item name:* Officers of the Signal Corps—Additional pay for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	4,519	\$120 per annum.....	\$542,280.00
Reserves.....			

Total requirements:

Deductions:			
COST BASIS: \$	Estimated quantity on hand July 1, 1919.....		.....
	Estimated salvage and reclamation.....		.....
	Total deductions.....		.....
	Net requirements.....		.....
	Total cost of net requirements.....		\$542,280.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated average per capita cost.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act May 11, 1908, vol. 35, p. 108.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date..... Checked by..... Estimate made by J. M.

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:    Item name: Medical Department—Contract surgeon.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	50	\$1, 800	\$90, 000
Reserves.....			

Total requirements:

Deductions:		
	Estimated quantity on hand July 1, 1919.....	.....
COST BASIS:	Estimated salvage and reclamation.....	.....
\$	Total deductions.....	.....
	Net requirements.....	.....
	Total cost of net requirements.....	\$90, 000

\*“Working basis” is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Pay of contract surgeon, \$1, 800. 00 per annum.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Number obtained from Surgeon General's Office.

Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Item name: Medical Department—Pay of nurses.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	2, 250	See letter attached .....	\$1, 712, 580. 00
Reserves .....			

Total requirements:

Deductions:

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$1, 712, 580. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See letter attached.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

NOVEMBER 20, 1918.

111.3-FEA 2

The Director of Finance.

The Surgeon General of the Army, Washington, D. C.

Revised estimate, fiscal year 1920.

1. For use in the preparation of revised estimates for the pay of the Army for the fiscal year 1920, the following information is requested, based on the assumption that the Army will consist of 500,000 enlisted men, in the United States and its insular possessions, organized as provided by the act of June 3, 1916:

(a) Number of officers of the Medical Department for whom it is desired that provision be made.

(b) Number of reserve veterinarians for whom it is desired that provision be made.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.    Item name: Retired pay of officers on the retired list.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1, 014	See remarks.....	\$2, 788, 650. 00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Cost BASIS:	Estimated quantity on hand July 1, 1919.....		
	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
\$	Total cost of net requirements.....		
			\$2, 788, 650. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Letter from Adjutant General dated October 19, 1918.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 108.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
Copy of letter attached.

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

111.3 FA-FC  
Acting Quartermaster General.  
The Adjutant General, Washington, D. C.  
Annual estimate, fiscal year 1920.

- For use in preparing estimate for the pay of the Army for the fiscal year 1920, information is desired as follows:
- (a) The number by grades of retired officers.
  - (b) The number by grades of retired officers assigned to active duty.
  - (c) The number by grades of retired Philippine Scout officers.
  - (d) The number of retired veterinarians.

(e) The number of retired pay clerks for whom it is desired that provision be made.

By authority of the Acting Quartermaster General:

JAMES MACKAY,  
Major, Quartermaster Corps.

JM/MAM

A. G. Adm. 111.3

WAR DEPARTMENT,  
THE ADJUTANT GENERAL'S OFFICE,  
Washington, October 19, 1918.

From: The Adjutant General of the Army.  
To: The Acting Quartermaster General.  
Subject: Annual estimate, fiscal year 1920.

The following information is furnished in response to your letter No. 111.3 FA-FC:

(a) The number of retired officers on October 19, 1918, by grades, is as follows:

Lieutenant generals.....	3
Major generals.....	28
Brigadier generals.....	161
Colonels.....	208
Lieutenant colonels.....	99
Majors.....	216
Captains.....	206
First lieutenants.....	74
Second lieutenants.....	19
Total.....	1,014

(b) The number of retired officers on active duty on October 19, 1918, by grades, is as follows:

	Regular Army.	Philippine Scouts.
Major generals.....	7	
Brigadier generals.....	10	
Colonels.....	101	
Lieutenant colonels.....	61	
Majors.....	108	
Captains.....	110	28
First lieutenants.....	30	2
Second lieutenants.....	5	3
Chaplains (2 majors, 1 captain).....	3	
Professor (colonel).....	1	
Total.....	436	33

(c) The number of retired Philippine Scout officers on October 19, 1918, by grades, is as follows:

Captains.....	30
First lieutenants.....	16
Second lieutenants.....	4
Total.....	50

(d) The number of retired veterinarians on October 19, 1918, by grades, is as follows:

Majors.....	2
Captains.....	4
First lieutenants.....	2
Second lieutenant.....	1
Total.....	9

(e) This office has no information relative to the number of retired pay clerks.

P. C. HARRIS.

3 lieutenant generals	×6,750.....	\$20,250.00
28 major generals	×6,000.....	168,000.00
161 brigadier generals	×4,500.....	724,500.00
208 colonels	×3,000.....	624,000.00
99 lieutenant colonels	×2,625.....	259,875.00
216 majors	×2,250.....	486,000.00
206 captains	×1,800.....	370,800.00
74 first lieutenants	×1,500.....	111,000.00
19 second lieutenants	×1,275.....	24,225.00
		2,788,650.00

A. G. 111.3 –Adm.

WAR DEPARTMENT,  
THE ADJUTANT GENERAL'S OFFICE,  
*Washington, October 29, 1918.*

From: The Adjutant General of the Army.  
To: The Director of Finance.  
Subject: Annual estimate, fiscal year 1920.

Referring to your letter of to-day (111.3), relative to the number of officers on the retired list of the Army on June 30, 1914, 1915, 1916, 1917, and 1918, the records of this office show as follows:

Retired commissioned officers:	
June 30, 1914.....	1,032.
June 30, 1915.....	1,005.
June 30, 1916.....	1,017 (incl. 31 P. S.).
June 30, 1917.....	1,085 (incl. 47 P. S. officers).
June 30, 1918.....	1,083 (incl. 52 P. S. officers).

P. C. HARRIS.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army. *Item name:* Retired officers—Additional pay  
for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	822	See letter attached.....	\$530, 535. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$530, 535. 00

\*"Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Letter from Adjutant General dated October 18, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

R. S. P. 218, secs. 1243-1245.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

See copy of letter attached.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

W. J. B. P. N. J. L. 20.

$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

### ADDITIONAL MATERIAL AND PERSONAL SERVICES



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.      *Item name:* Pay of retired veterinarians.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	2	\$1,785 (per annum).....	\$3,570.00
Reserves.....			

Total requirements:

Deductions:

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$3,570.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Letter Adjutant General, October 19, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act Mar. 3, 1911, vol. 36, p. 1042.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Two retired veterinarians, at \$1,785 per annum.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Pay of retired pay clerks.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	11	\$1, 687. 50 per annum...	\$18, 562. 00
Reserves. ....	.....	.....	.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
Cost BASIS:	Estimated salvage and reclamation.....	.....	.....
\$	Total deductions.....	.....	.....
	Net requirements.....	.....	.....
	Total cost of net requirements.....	.....	\$18, 562. 50

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Central Disbursing Division.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act Mar. 3, 1911, vol. 36, p. 1042.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
Eleven retired pay clerks, at \$1,687.50 per annum.

Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Retired officers—Increased pay to retired officers on active duty.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	469	.....	\$229,760.00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
\$			\$229,760.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Letter Adjutant General, October 19, 1918.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 108.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

61 lieutenant colonels	×	\$375.00	.....	\$22,875.00
110 majors	×	750.00	.....	82,500.00
111 captains	×	600.00	.....	66,600.00
30 first lieutenants	×	500.00	.....	15,000.00
5 second lieutenants	×	425.00	.....	2,125.00
28 captains	×	1,320.00	.....	36,960.00
2 first lieutenants	×	920.00	.....	1,840.00
3 second lieutenants	×	620.00	.....	1,860.00
350				229,760.00

5. REMARKS:

Date.....      Checked by.....      Estimate made by.....

(For additional space use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Retired officers on active duty—  
Additional pay for length of service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	\$71, 650. 00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:	
Estimated quantity on hand July 1, 1919.....	.....
COST BASIS: Estimated salvage and reclamation.....	.....
\$ Total deductions.....	.....
Net requirements.....	.....
Total cost of net requirements.....	\$71, 650. 00

\* "Working basis" is the quantity required per man or per unit for stated period:  
or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Letter Adjutant General, Oct. 19, 1918.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 108.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

61 lieutenant colonels	× \$250.....	\$15, 250. 00
110 majors	× 250.....	27, 500. 00
139 captains	× 180.....	25, 020. 00
32 first lieutenants	× 100.....	3, 200. 00
8 second lieutenants	× 85.....	680. 00
350		71, 650. 00

5. REMARKS:

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army. Item name: Pay of enlisted men, retired.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	4, 490	.....	\$3, 404, 844. 00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$3, 404, 844. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Letter Adjutant General, Oct. 17, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act May 11, 1908, vol. 35, p. 113.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:  
See schedule attached.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

Number and rates of pay of retired enlisted men on October 17, 1918.

185×90. 00×12.....	\$199, 800. 00
4×82. 50×12.....	3, 960. 00
147×71. 25×12.....	125, 685. 00
2. 428×67. 50×12.....	1, 966, 680. 00
122×63. 75×12.....	93, 330. 00
509×60. 75×12.....	371, 061. 00
783×51. 75×12.....	486, 243. 00
73×47. 25×12.....	41, 391. 00
89×45. 00×12.....	48, 060. 00
66×42. 75×12.....	33, 858. 00
84×34. 50×12.....	34, 776. 00
4, 490	3, 404, 844. 00

WAR DEPARTMENT,  
THE ADJUTANT GENERAL'S OFFICE,  
*Washington, October 29, 1918.*

From: The Adjutant General of the Army.  
To: The Director of Finance.  
Subject: Annual estimate, fiscal year 1920.

Referring to your letter of to-day (111.3), relative to number of enlisted men on the retired list of the Army on June 30, 1914, 1915, 1916, 1917, and 1918, the records of this office show as follows:

Retired enlisted men:	
June 30, 1914.....	3,798
June 30, 1915.....	4,028
June 30, 1916.....	4,154
June 30, 1917.....	4,303
June 30, 1918.....	4,460

P. C. HARRIS.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Pay and allowance of retired  
enlisted men on active duty.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	\$25, 000. 00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:		
Estimated quantity on hand July 1, 1919.....		.....
COST BASIS:	Estimated salvage and reclamation.....	.....
\$	Total deductions.....	.....
	Net requirements.....	.....
	Total cost of net requirements.....	\$25, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Letter A. G. Oct. 17, 1918.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:  
Act June 3, 1916, vol. 39, p. 166.
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
Disbursements fiscal year 1917, \$15,845.49.

Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.      *Item name:* Pay and allowance of Regular Army Reservists on active duty.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....
Reserves.....	.....	.....	\$50,000. 00

Total requirements:

Deductions:			
	Estimated quantity on hand July 1, 1919.....	.....	.....
COST BASIS:	Estimated salvage and reclamation.....	.....	.....
\$	Total deductions.....	.....	.....
	Net requirements.....	.....	.....
	Total cost of net requirements.....	.....	\$50,000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Disbursements, fiscal year 1917. \$45,821.53.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 3, 1916, vol. 39, p. 187.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)



**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.      *Item name:* Pay of hospital matrons.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	30	\$120 per annum.....	\$3, 600. 00
Reserves.....			

Total requirements:

**Deductions:**

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$3, 600. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Letter Surgeon General. October 17, 1918.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

R. S. P., p. 221, sec. 1277.

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date..... Checked by..... Estimate made by J. M

(For additional space, use additional sheets of this size.)

[Copy.]

S. G. O. 111.3 (fiscal year 1920).

OCTOBER 11, 1918.

113.3. FA-FC.

Acting Quartermaster General.

The Surgeon General, U. S. A., Washington, D. C.

Annual estimate, fiscal year 1920.

For use in preparing the annual estimates information is requested as to the number of hospital matrons for whom it is desired that provision be made during the fiscal year 1920.

By authority of the Acting Quartermaster General.

JAMES MACKAY,  
Major, Quartermaster Corps.

[1st indorsement.]

War Department, S. G. O., October 17, 1918. To the Acting Quartermaster General:

1. It is requested that provision be made for pay of 30 hospital matrons, 1920.

For Acting Surgeon General:

C. R. DARNALL,  
*Colonel, Medical Corps.*

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Expenses of courts-martial.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	\$500, 000. 00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
COST BASIS: \$	Estimated quantity on hand July 1, 1919.....	.....	
	Estimated salvage and reclamation.....	.....	
	Total deductions.....	.....	
	Net requirements.....	.....	
	Total cost of net requirements.....		\$500, 000. 00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- |                                      |               |
|--------------------------------------|---------------|
| Disbursements, fiscal year 1917..... | \$85, 748. 68 |
| Disbursements, fiscal year 1918..... | 250, 987. 15  |

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- Revised Statutes, p. 223, sec. 1287.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

Statement showing court-martial expenses for periods as indicated below.

	Reporters.	Witnesses.
First quarter fiscal year 1918.....	\$18, 035. 61	\$5, 153. 68
Second quarter fiscal year 1918.....	44, 920. 71	11, 314. 96
Third quarter fiscal year 1918.....	50, 309. 18	26, 275. 60
Fourth quarter fiscal year 1918.....	66, 159. 44	28, 817. 97
Total.....	179, 424. 94	71, 562. 21

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form P 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Additional pay to officers in charge  
of public buildings.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1	\$500. 00	\$500. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$500. 00

\* "Working basis" is the quantity required per man or per unit for stated period:  
or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act August 29, 1916, vol. 39, p. 628.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
Present officer in charge is a lieutenant colonel entitled to pay of colonel.

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Item name: Commutation of quarters and of heat and light.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	32, 141	\$150.00 per annum .....	\$4, 821, 150. 00

In order that funds will be appropriated under this item for warrant officers of the Army Mine Planter Service, the words "Warrant officers" should be inserted after the words "Commissioned officers."

Total cost of net requirements.....\$4, 821, 150. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIRMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act Mar. 2, 1907, vol. 34, p. 1169, establishing statutory rate.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

During fiscal year 1917 disbursements under this item amounted to \$1,400,926.17. The average number of officers during this period was 9.335, or a per capita cost of \$150.07.

5. REMARKS:

Date..... Checked by..... Estimate made by J. M.

(For additional space, use additional sheets of this size.)

*Commutation of quarters, heat and light.*

	Quarters, 4 rooms.	Maximum.	Heat and light, 4 rooms, min- imum.
January.....	\$48.00	\$27.15	\$22.15
February.....	48.00	27.15	22.15
March.....	48.00	26.55	19.75
April.....	48.00	20.80	10.30
May.....	48.00	20.80	10.30
June.....	48.00	19.40	10.30
July.....	48.00	19.40	10.30
August.....	48.00	19.40	10.30
September.....	48.00	19.40	10.30
October.....	48.00	21.75	11.25
November.....	48.00	26.55	19.75
December.....	48.00	27.15	22.15
	576.00	275.50	179.00
			275.50
			454.50

$$\begin{aligned} \$454.50 + 2 \times 227.25 \\ \$227.25 + 576 = 803.25 \end{aligned}$$

The average annual base pay of an officer, \$2,137, lies between the grades of a first lieutenant and captain. In view, however, of the fact that computation in most cases is paid to officers of higher rank, commutation is computed on the basis of the allowance for a captain.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army. *Item name:* Interest on soldiers' deposits.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	\$150, 000. 00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
	Estimated quantity on hand July 1, 1919.....	.....	
COST BASIS:	Estimated salvage and reclamation.....	.....	
\$	Total deductions.....	.....	
	Net requirements.....	.....	
	Total cost of net requirements.....		\$150, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Disbursements, fiscal year 1917, \$64 742.02.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
R. S., p. 225, sec. 1306.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Amount remaining to credit of depositors on August 31, 1918, \$4,190,313.57.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army. Item name: Expert accountant—Inspector General's Department.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	\$2, 500. 00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
			\$2, 500. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Statutory rate of pay.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 13, 1890, vol. 26, p. 15.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

Date..... Checked by..... Estimate made by.....  
(For additional space, use additional sheets of this size.)

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army. *Item name:* Extra pay to enlisted men employed on extra duty—Seacoast, etc.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	118 switchboard operators, 366 days, at 35 cents. Other extra duty .....		\$15, 115. 20
Reserves.....			9, 884. 80

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$25, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Letter Chief of Coast Artillery, October 18, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
R. S., p. 223, sec. 1287.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date..... Checked by..... Estimate made by.....  
(For additional space, use additional sheets of this size.)

OCTOBER 11, 1918.

111.3 FA-FC.

Acting Quartermaster General.

Chief of Coast Artillery, Washington, D. C.

Estimate for fiscal year 1920.

For use in the preparation of estimates for the fiscal year 1920, information is requested as to the number of enlisted men to be employed on extra duty as switchboard operators at seacoast fortifications, for which it is desired that provisions be made.

It is requested that the information be furnished with as little delay as practicable.

By authority of the Acting Quartermaster General:

JAMES MACKAY,  
Major, Quartermaster Corps.



[1st indorsement.]

221.74.

War Dept., O. C. C. A., Oct. 18, 1918. To the Acting Quartermaster General:

1. Returned.

2. The following table shows the number of switchboard operators for which it is desired provision be made for the fiscal year 1920:

Forts.	Switch-board operators.	Forts.	Switch-board operators.
Adams.....	2	Morgan.....	2
Andrews.....	2	Mott.....	2
Armstrong.....	1	Pickens.....	1
Baker.....	2	Preble.....	1
Banks.....	2	Randolph.....	2
Barrancas.....	3	Revere.....	2
Barry.....	2	Rodman.....	2
Casey.....	2	Rosecrans.....	2
Caswell.....	2	Ruger.....	2
Columbia.....	2	Screven.....	2
Constitution.....	2	Sherman.....	2
Crockett.....	2	Standish.....	2
Dede.....	2	Stevens.....	2
De Lesseps.....	2	Story.....	2
De Russy.....	2	Howard.....	2
Du Pont.....	2	Hunt.....	2
Flagler.....	2	Jackson Barracks.....	2
Getty.....	2	Ward.....	1
Greble.....	2	Wadsworth.....	2
H. H. Wright.....	4	Williams.....	2
Hamilton.....	2	Warden.....	3
Hancock.....	2	Terry.....	3
Kamehamaha.....	2	Tilden.....	2
Key West.....	2	Totten.....	2
Levett.....	1	Washington.....	2
McArthur.....	3	Warren.....	2
Michie.....	1	Winfield Scott.....	4
Miley.....	2		
McKinley.....	2	Total.....	118
Monroe.....	4		

This is an increase of 26 over the estimate for the fiscal year 1919. This increase is required because of the increase in strength of the personnel in the coast defenses.

F. W. COE,  
Major General, Chief Coast Artillery.

By C. E. BRIGHAM,  
Colonel, Coast Artillery,  
Assistant to the Chief of Coast Artillery.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army. Item name: Extra pay to enlisted men employed on extra duty as switchboard operators at each interior post of the Army.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	150, at 35 cents per day for 366 days.		\$19,215.00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$19,215.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Letter Chief Signal Officer. October 24, 1918.
  - 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
R. S., p. 223, sec. 1287.
  - 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
  - 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
  - 5. REMARKS:
- Date..... Checked by..... Estimate made by.....  
(For additional space, use additional sheets of this size.)

OCTOBER 11, 1918.

111.3 FA-FC  
Acting Quartermaster General.  
Chief Signal Officer, U. S. A., Washington, D. C.  
Annual estimates, fiscal year 1920.

For use in the preparation of estimates for the fiscal year 1920, the following information is requested:

(a) The number of enlisted men to be employed on extra duty as switchboard operators at interior posts; (b) the number of enlisted men to be employed in the Territory of Alaska on the Washington-Alaska cable and telegraph system, for which it is desired that provision be made.

By authority of the Acting Quartermaster General:

JM-MAM-EWM

JAMES MACKAY,  
Major, Quartermaster Corps.

[1st ind.]

231.3 Misc.

fss:afb

O. C. A. O., October 24, 1918, to the Acting Quartermaster General:

This office estimates:

(a) One hundred and fifty enlisted men to be employed on extra duty as switchboard operators at interior posts, 1920.

(b) Three hundred enlisted men to be employed in the Territory of Alaska on the Washington-Alaska cable and telegraph system.

By authority of the Acting Chief Signal Officer:

F. R. CURTIS,  
*Colonel, Signal Corps.*

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.    *Item name:* Extra pay to enlisted men of the line of the Army, etc., employed on Washington-Alaska Cable and Telegraph system.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	300 men for 366 days, at 35 cents per day		\$38, 430. 00
Reserves.....			

Total requirements:

Deductions:			
COST BASIS: \$	Estimated quantity on hand July 1, 1919.....		
	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$38, 430. 00

\*" Working basis " is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Letter Chief Signal Officer, dated Oct. 24, 1918.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act August 29, 1916, vol. 39, p. 629.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

ESTIMATE  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Mileage.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	525, 000	\$6.00 per capita.....	\$3, 150, 000. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$3, 150, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 12, 1906, vol. 34, p. 246.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:
- Date.....      Checked by.....      Estimate made by J. M.
- (For additional space, use additional sheets of this size.)

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation: Pay of the Army. Item name: Mileage.*

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	525, 000	\$6.00 per capita.....	\$3, 150, 000. 00

In order that funds will be appropriated under this item for warrant officers of the Army Mine Planter Service, the words "warrant officers" should be inserted after the words "commissioned officers."

Total cost of net requirements..... \$3,150,000.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act June 12, 1906, vol. 34, p. 246.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

*Mileage estimate, fiscal year 1920.*

Fiscal year.	Number men per officer.	Number of off- cers.	Number officers and men.	Amount appropriated.	Per capita for off- cers.	Per ca- pita for officers and men.
1907.....	16.0	3,869	66,385	\$600,000.00	\$152.00	\$9.00
1908.....	17.5	3,850	67,503	600,000.00	156.00	9.00
1909.....	18.6	4,048	75,252	600,000.00	148.00	8.00
1910.....	16.8	4,273	71,758	625,000.00	146.00	9.00
1911.....	17.4	4,281	74,282	625,000.00	146.00	8.00
1912.....	17.0	4,847	82,370	600,000.00	124.00	7.00
1913.....	18.0	4,793	86,340	588,000.00	123.00	7.00
1914.....	18.7	4,782	89,642	500,000.00	105.00	6.00
1915.....	19.0	4,826	91,757	500,000.00	104.00	5.00
1916.....	19.0	4,840	92,080	570,000.00	118.00	6.00
1917.....	18.9	7,442	139,787	862,500.00	119.00	6.00
1918.....	18.5	75,062	1,394,588	9,750,000.00	130.00	7.00

NOTES.—The above table shows an expenditure during the fiscal year 1918 of a per capita for officers and men of \$7. However, as it is very probable that more settled conditions will exist in 1920, it is thought that \$6 per capita will be sufficient.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Additional 10 per cent increase of  
pay of officers on foreign service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	\$250, 000. 00
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
Cost BASIS:	Estimated salvage and reclamation.....	.....	.....
\$	Total deductions.....	.....	.....
	Net requirements.....	.....	.....
	Total cost of net requirements.....	.....	\$250, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Prewar basis.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act June 12, 1906, vol. 34, p. 247.  
Act May 11, 1908, vol. 35, p. 108.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Appropriation, fiscal year 1916..... \$240, 000. 00  
Appropriation, fiscal year 1917..... 250, 000. 00

Date.....      Checked by.....      Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Additional 20 per cent increase of pay of enlisted men on foreign service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	16, 860	\$47. 45	\$800, 000. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
Cost BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$800, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Prewar basis.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act of June 12, 1906, vol. 34, p. 247.  
Act of May 11, 1908, vol. 35, p. 108.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Appropriation, fiscal year 1916..... \$750, 000. 00  
Appropriation, fiscal year 1917..... 800, 000. 00
- Date..... Checked by..... Estimate made by.....
- (For additional space, use additional sheets of this size.)



**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY.

Appropriation: Pay of the Army.      Item name: Pay of computer, Artillery Board.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1	\$2, 500. 00	\$2, 500. 00
Reserves.....			

Total requirements:

## Deductions:

Estimated quantity on hand July 1, 1919.....

COST BASIS: Estimated salvage and reclamation.....

\$ Total deductions.....

Net requirements.....

Total cost of net requirements..... \$2, 500. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Statutory.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act Aug. 29, 1916, vol. 39, p. 629.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

See attached letter from the Chief of Coast Artillery in which recommendation is made that this item be increased to \$3,000.00.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

[Copy.]

TREASURY DEPARTMENT,  
Washington, October 9, 1918.

MY DEAR SIR: In connection with the preparation of the annual estimates of appropriations for the fiscal year 1920, which by law should be forwarded to the Secretary of the Treasury on or before October 15, 1918, I have the honor to invite your attention to the desire of the President recently made known to the heads of the several executive departments, that no increase in statutory salaries be submitted in the annual estimates, but that recommendations for

such increases be embodied in a separate letter addressed to the Secretary of the Treasury for transmission to the Congress for its consideration.

Increases in force and in lump-sum appropriations may be submitted as heretofore.

Respectfully,

W. G. McADOO, *Secretary.*

AUGUST 22, 1918.

In reply refer to:

From: Chief of Coast Artillery.

To: Quartermaster General.

Subject: Pay of computer for Artillery Board.

1. When the estimates for the fiscal year 1920 are prepared, it is requested that provision be made for an increase in the pay of the computer for the Artillery Board from \$2,500 per annum to \$3,000 per annum.

2. To support this increased estimate, the following information is furnished.

The present occupant of this position has not received an increase in pay during the past 15 years, and he has been continuously in the Government employ for the past 28 years. It is understood that positions similar to this in the Navy Department are receiving pay of \$3,500 per annum. The duties of the computer of the Artillery Board are indicated by an extract from letter of the commandant at Fort Monroe to Mr. Junken, the present computer, in reference to his employment in 1902. He was expected to perform the duties of computer, translator, and draftsman, and to perform such other work as may be required by the board. The computer's tasks include the calculation of range tables, range and deflection corrections, elevation corrections for height of site and curvature, the drawing of ballistic curves, the solution of problems in seacoast engineering affecting base lines used by the board for tests of range finders, the execution of such important mechanical and other drawings as are required by the board from time to time, the recording, plotting, and comparison of copies of the result of observations, calculations, or tests by the boards, the supervision of the record files, as well as a general knowledge of the history of the transactions of the board.

3. This office will be glad to have a representative appear to support this item before the congressional committee at the hearings.

4. In the Book of Estimates of Appropriations for the fiscal year 1919 this item appears on page 318, under "Pay of the Army, Misc.," and is covered by the following language: "For pay of one computer for Artillery Board (acts Aug. 29, 1916, vol. 39, p. 29, May 12, 1917, vol. 40, p. 39, sec. 1)."

MAM

F. W. COE,  
*Major General.*

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of Army.

Item name: Payment of exchange.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	1,000
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....	.....	.....
\$	Total deductions.....	.....	.....
	Net requirements.....	.....	.....
	Total cost of net requirements.....	.....	\$1,000.00

\*"Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act August 29, 1916, vol. 39, p. 629.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Appropriation, fiscal year 1916..... \$600.00  
Appropriation, fiscal year 1917..... 600.00

Date..... Checked by..... Estimate made by.....

(For additional space use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation:      Item name: Additional pay for mounts.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....			\$300,000.00
Reserves.....			

Total requirements:

Deductions:	
Estimated quantity on hand July 1, 1919....	
Cost BASIS: Estimated salvage and reclamation.....	
\$ Total deductions.....	
Net requirements.....	
Total cost of net requirements.....	\$300,000.00

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
750 officers, 2 mounts, \$200 per annum..... \$150,000.00  
1,000 officers, 1 mount, \$150 per annum..... 150,000.00
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Appropriation, fiscal year 1916..... \$190,000.00  
Appropriation, fiscal year 1917..... 225,000.00

Date..... Checked by..... Estimate made by.....  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Pay of Jennie Carrol.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1	\$1, 500. 00 per annum...	\$1, 500. 00
Reserves.....			

Total requirements:

Deductions:	
Estimated quantity on hand July 1, 1919....	
COST BASIS: Estimated salvage and reclamation.....	
\$ Total deductions.....	
Net requirements.....	
Total cost of net requirements.....	

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Statutory.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act of May 23, 1908, vol. 35, p. 489.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:

Date.....      Checked by.....      Estimate made by J. M.

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

Appropriation: Pay of the Army.      Item name: Additional pay for length of service  
for officers of Philippine Scouts.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	292	\$120 per annum.....	\$35, 040. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
Cost BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		
			\$35, 040. 00

\*"Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
G. O. No. 21. Headquarters Philippine Department, Apr. 5, 1918.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
R. S., p. 220, sec. 1262-1263.  
Act May 11, 1908, vol. 35, p. 115.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
Average per capita cost obtained by computation of pay of all.

Date.....      Checked by.....      Estimate made by.....  
(For additional space, use additional sheets of this size.)

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:*      *Item name:* Pay of officers, Philippine Scouts.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	292	\$2, 137 per annum.....	\$624, 004. 00
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
§	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$624, 004. 00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
General Order No. 21, Headquarters Philippine Department, April 5, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act Feb. 2, 1901, vol. 21, p. 757.  
Act May 16, 1908, vol. 35, p. 163.  
Act May 11, 1908, vol. 25, p. 115.  
Act June 3, 1916, vol. 39, p. 181.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Average per capita cost determined by computation of pay of all grades in an Infantry division.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.      *Item name:* Pay of Jno. R. Kissinger.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1	\$1,200 per annum .....	\$1,200. 00
Reserves.....			

Total requirements:

Deductions:			
COST BASIS: \$	Estimated quantity on hand July 1, 1919.....	.....	
	Estimated salvage and reclamation.....	.....	
	Total deductions.....	.....	
	Net requirements.....	.....	
	Total cost of net requirements.....		\$1,200. 00

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Statutory.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act Feb. 5, 1911, vol. 36, p. 1300.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:
- Date.....      Checked by.....      Estimate made by J. M.

(For additional space, use additional sheets of this size.)



**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.*Item name:* Pay of Mabel H. Lazear.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1	\$1,500 per annum .....	\$1, 500. 00
Reserves.....			

Total requirements:

## Deductions:

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$1, 500. 00

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Statutory.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act of May 23, 1908.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date ..... Checked by..... Estimate made by J. M.

(For additional space, use additional sheets of this size.)

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.      *Item name:* Additional pay for length of service  
for officers of Philippine Scouts.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	292	\$120. 00 per annum.....	\$35, 040. 00
Reserves.....			

Total requirements:

Deductions:			
	Estimated quantity on hand July 1, 1919.....		
COST BASIS:	Estimated salvage and reclamation.....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$35, 040. 00

\*"Working basis" is the quantity required per man or per unit for stated period:  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
General Order No. 21, Headquarters Philippine Department, Apr. 5, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

R. S., p. 220, 1263-1262.

Act May 11, 1908, vol. 35, p. 115.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army.      *Item name:* Pay of enlisted men, Philippine Scouts.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	9,133	\$145.26 per annum.....	\$1,326,648.00
Reserves.....			

Total requirements:

**Deductions:**

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$1,326,648.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
General Order No. 21, Headquarters Philippine Department, Apr. 5, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Act Feb. 2, 1901, vol. 31, p. 767.  
Act June 3, 1916, vol. 39, p. 181.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

See attached statement.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

Philippine scouts.

Grade.	Number and monthly rate.	Year.
Battalion sergeant major.....	13 X \$30.00 X 12	\$4,680.00
Colonel sergeant.....	13 X 20.00 X 12	3,120.00
First sergeant.....	86 X 27.00 X 12	27,864.00
Mess sergeant.....	99 X 20.00 X 12	23,760.00
Supply sergeant.....	99 X 20.00 X 12	23,760.00
Sergeants.....	516 X 20.00 X 12	123,840.00
Corporals.....	946 X 14.00 X 12	158,928.00
Cooks.....	198 X 15.00 X 12	35,640.00
Buglers.....	172 X 10.00 X 12	20,640.00
Mechanics.....	86 X 14.00 X 12	14,448.00
Privates, first class.....	1,660 X 12.00 X 12	239,040.00
Privates.....	4,894 X 10.00 X 12	587,280.00
Band leader.....	13 X 33.00 X 12	5,142.00
First sergeant (drum major).....	13 X 27.00 X 12	4,212.00
Band sergeant.....	26 X 20.00 X 12	6,240.00
Band corporal.....	52 X 14.00 X 12	8,736.00
Musicians, first class.....	26 X 20.00 X 12	6,240.00
Musicians, second class.....	52 X 14.00 X 12	8,736.00
Musicians, third class.....	169 X 12.00 X 12	24,336.00
Total.....	9,133.....	1,326,648.00

\$1,326,648 divided by 9,133 equals \$145.26.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. ....

PAY OF THE ARMY DIVISION.

*Appropriation:* Pay of the Army. *Item name:* Additional pay for length of service of enlisted men of Philippine Scouts.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	8, 129	\$6. 78 per annum.....	\$55, 126. 00
Reserves.....			

Total requirements:

**Deductions:**

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$55, 126. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

General Order No. 21, Headquarters Philippine Department, Apr. 5. 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Act Feb. 2, 1901, vol. 31, p. 767.

Act June 3, 1916, vol. 39, p. 181.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Disbursements, fiscal year 1917, \$38,879. strength, 5,733 men.

5,733 : 38,879 :: 8,129 : 55,126.

Date..... Checked by..... Estimate made by.....

(For additional space, use additional sheets of this size.)

**PHILIPPINE SCOUTS.**

The President is authorized to enlist natives of the Philippine Islands, not to exceed 12,000 to be organized as scouts, or as troops or companies as provided for the Regular Army; the pay, rations, and clothing allowance to be fixed by the Secretary of War. The majors shall be selected from the next lower grade in the Regular Army, and while so serving shall have the rank, pay, and allowances of the grade to which assigned. Captains shall be selected from first lieutenants of scouts and given provisional appointments for periods of four years

each. The squadron and battalion staff officers and first and second lieutenants of companies may be appointed from noncommissioned officers or enlisted men of the Army for periods of four years each, and shall have the pay and allowance of officers of like grade in the Regular Army. Natives may be appointed to the grade of second and first lieutenants and shall have the pay and allowances as fixed by the Secretary of War. (Act Feb. 2, 1901, 31 Stat., 757; G. O. 9, 1901; and act May 16, 1906 35 Stat., 163.)

Organization, 13 battalions, each consisting of one headquarters company and four companies—5,733 (G. O. 750, W. D. 1916).

GENERAL ORDERS, } HEADQUARTERS PHILIPPINE DEPARTMENT,  
No. 21. } *Manila, P. I., April 5, 1918.*

1. Pursuant to instructions from the War Department, dated April 3, 1918, under the Army reorganization act approved February 2, 1901, as amended, the President authorizes an increase in the Philippine Scouts of four battalions, without bands, and eighteen separate companies, which will be referred to as the 14th to 17th Battalions (53d to 68th Companies), and as the 69th to 86th Companies.

By command of Brigadier General Evans:

S. W. WINFREE,  
*Major, Ninth Cavalry, Chief of Staff.*

Official:

EDWIN LANDON,  
*Adjutant General, Department Adjutant.*

# ARMY APPROPRIATION BILL

1920

▽

## SUBSISTENCE OF THE ARMY

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Printed for the use of the Committee on Military Affairs of the House

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PART 2

WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1919







JANUARY 2, 1919.

## ANNUAL ESTIMATES, FISCAL YEAR 1920.

### SUBSISTENCE OF THE ARMY.

Item No.

101. Purchase of subsistence for issue as rations to—	
A. Troops.....	\$89,410,011.90
B. Civil employees.....	97,026.60
C. Hospital matrons.....	5,821.60
D. Nurses.....	485,133.00
E. Applicants for enlistment while held under observation.....	
F. General prisoners of war.....	
G. Indians held by the Army as prisoners.....	
H. Indians employed with the Army as guides and scouts.....	
I. General prisoners at posts.....	485,133.00
Total 101.....	90,483,126.10
102. For the subsistence of the—	
A. Masters of the vessels of the Army Transport Service.....	17,842.50
B. Officers of the vessels of the Army Transport Service.....	278,343.00
C. Crews of the vessels of the Army Transport Service.....	1,053,421.20
D. Employees of the vessels of the Army Transport Service.....	35,685.00
Total 102.....	1,385,291.70
103. Hot coffee for troops traveling when supplied with cooked or travel rations.....	39,275.46
104. Meals for—	
A. Recruiting parties.....	3,294,000.00
B. Applicants under observation.....	1,181,250.00
C. Enlisted men reporting without means.....	
Total 104.....	4,475,250.00
105. Purchase of subsistence supplies for sales to—	
A. Officers.....	50,000.00
B. Enlisted men.....	175,000.00
C. Navy.....	
D. Marine Corps.....	
Total 105.....	225,000.00
106. Supplying meals for competitors in National Rifle Match.....	12,000.00
107. For payment of commutation of rations—	
A. Cadets at the United States Military Academy.....	248,880.00
B. Enlisted men on furlough.....	1,464,000.00
C. Enlisted men when stationed at places where rations can not be furnished.....	4,643,625.00
D. Male and female nurses when stationed at places where rations can not be furnished.....	28,365.00
E. Enlisted men selected to contest at Army rifle competitions....	14,114.25
F. Male and female nurses on leave of absence.....	27,523.20
G. Applicants for enlistment when traveling under orders.....	12,352.50
H. General prisoners.....	21,633.42

I. Members of the Nurse Corps (female) while on duty in hospitals..	\$501,010.08
J. Commutation of rations to enlisted men sick in hospitals.....	5,627,542.80
K. Commutation of rations for applicants for enlistment under observation.....	
L. Commutation of rations to general prisoners sick in hospitals....	27,661.40
Total 107.....	12,616,707.65
108. Advertising.....	3,300.04
109. Prizes to be established by the Secretary of War for enlisted men of the Army who graduate from Army Schools for Bakers and Cooks.....	1,500.00
110. Other necessary expenses incident to purchase, testing, care, preservation, issue, sale, and accounting for subsistence supplies of the Army.....	210,565.98
A. Customs duties.....	5,000.00
B. Losses on subsistence stores.....	904,831.26
C. Hire of employees.....	10,100.00
Total 110.....	1,130,497.24
Total subsistence of the Army.....	110,371,952.15

## REGULAR SUPPLIES, EXCEPT FORAGE.

119. Candles.....	100,000.00
120. Matches.....	571,875.00
130. Ice for issue to troops.....	640,500.00
132. Ice for preservation of stores.....	160,125.00
137. Soap, issue.....	585,600.00
152. Salt for animals.....	16,456.28
153. Vinegar for animals.....	43,883.52
Total regular supplies except forage.....	2,118,439.80
Total amount for the Subsistence Division, except forage.....	112,490,391.95

## FORAGE.

151. Oats for horses.....	\$7,222,644.00
151. Oats for mules.....	3,666,880.80
151. Hay.....	9,668,439.00
	20,557,963.80
159. Straw for soldiers' bedding.....	100,000.00
154. Bedding in kind for animals.....	719,400.00
158. Expenses incident to raising forage.....	25,000.00
157. Labor required for raising forage.....	70,000.00
156. Implements for raising forage.....	35,000.00
155. Seeds for raising forage.....	40,000.00
Total forage.....	21,547,363.80
Total for Subsistence Division, including forage.....	134,037,755.75

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 101-A

SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name:* Rations to troops.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	460, 750	366 days.....	168, 634, 500
Reserves.....			

Total requirements..... \$168, 634, 500

Deductions:		
Estimated quantity on hand July 1, 1919.....		
COST BASIS:	Estimated salvage and reclamation.....	
\$0.5302.	Total deductions.....	
	Net requirements.....	168, 634, 500. 00
	Total cost of net requirements.....	\$89, 410, 011. 90

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD OF AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which rations will be required.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
The value of the ration for the United States is based on the latest available average cost of ration 0.482 plus 10 per cent to cover the constant increase in cost of the component and substitutive articles.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

The difference of 39,250 between the authorized strength of 500,000 men and the 460,750 men for whom rations are estimated is provided for elsewhere, as follows:

	Men.
Under Item No. 101-I.....	2, 500
Under Item No. 104-A.....	6, 000
Under Item No. 107-B.....	10, 000
Under Item No. 107-C.....	5, 750
Under Item No. 107-J.....	15, 000
Total.....	39, 250

5. REMARKS:

Estimate made by..... Checked by..... Date November 25, 1918

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.    Item No. 101-B.  
SUBSISTENCE.

*Appropriation:* Subsistence of the Army.    *Item name:* Purchase of subsistence supplies for issue as rations to civil employees.

	Strength.	Working basis.*	Requirements.
Initial equipment.....			
Maintenance.....	500	366 days.....	183,000
Reserves.....			

Total requirements..... 183,000

Deductions:		
Cost Basis:	Estimated quantity on hand July 1, 1919....	
\$0.5302.	Estimated salvage and reclamation.....	
	Total deductions.....	
	Net requirements.....	183,000
	Total cost of net requirements.....	\$97,026.60

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which rations will be required.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
The value of the ration for the United States is based on the latest available average cost of ration, \$0.482 plus 10 per cent to cover the constant increase in cost of the component and substitutive articles.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
Men employed as teamsters at posts, etc., for compensation under \$60 per month. It is estimated that the average number of civilian employees that will be required under the above will be approximately one-tenth of 1 per cent of the total number of troops and authorized by Army Regulations.

Estimate made by..... Checked by..... Date, Nov. 25, 1918.  
(For additional space, use additional sheets of this size.)

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION. Item No. 101-C.

## SUBSISTENCE.

*Appropriation:* Subsistence of the Army. *Item name:* Purchase of subsistence supplies for issue as rations to hospital matrons.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	30	366 days.....	10, 980
Reserves.....			

Total requirements ..... 10, 980

## Deductions:

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$0.5302.	Total deductions.....	
	Net requirements.....	10, 980
	Total cost of net requirements.....	\$5, 821. 60

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Actual number of days for which rations will be required.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

The value of the ration for the United States is based on the latest available average cost of ration, \$0.482 plus 10 per cent to cover the constant increase in cost of the component and substitutive articles.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

## 5. REMARKS:

Hospital matrons are employed as laundresses, etc., in and about the hospital, and authorized by A. R., and by section 1239, Revised Statutes. They are rationed under the authority of section 1295, as amended by section 19, act of Feb. 2, 1901 (31 Stat., 753).

Estimate made by D. J. B.

Checked by .....

Date Nov. 25, 1918

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 101-D.  
SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name.* Purchase of subsistence supplies for issue as rations to nurses.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	2, 500	366 days, at \$0.5302.....	915, 000
Reserves.....			

Total requirements:

Deductions:			
COST BASIS: \$0.5302.	Estimated quantity on hand July 1, 1919.....		
	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		915, 000
	Total cost of net requirements.....		\$485, 133. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which rations will be required.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
The value of the ration is based on the latest available average cost of ration 0.482 plus 10 per cent to cover the constant increase in cost of the component and substitutive articles.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
This estimate is for student nurses. The figures were furnished by the Medical Department.

Estimate made by.....      Checked by.....      Date, Nov. 25, 1918.  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 101-E.  
SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name:* Purchase of subsistence supplies for issue as rations to applicants for enlistment held under observation.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS: \$	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
No estimate; amount negligible. If rations are required they can be supplied under 101-A.

Estimate made by.....      Checked by.....      Date, November 25, 1918.  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 101-F.  
SUBSISTENCE.

*Appropriation:* Subsistence of the Army.    *Item name:* Purchase of subsistence supplies for issue as rations to general prisoners of war.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....			
Reserves.....			

Total requirements:

Deductions:		
	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total decuctions.....	
	Net requirements.....	
	Total cost of net requirements.....	

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

It is not estimated that there will be any general prisoners of war during the fiscal year 1920.

Estimate made by D. J. B.      Checked by.....      Date Nov. 25, 1918.



**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 101-G.

## SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name:* Purchase of subsistence supplies for issue as rations to Indians held by Army as prisoners.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
COST BASIS: \$	Estimated quantity on hand July 1, 1919.....	.....	.....
	Estimated salvage and reclamation.....	.....	.....
	Total deductions.....	.....	.....
	Net requirements.....	.....	.....
	Total cost of net requirements.....	.....	.....

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

No estimate under this item. They are now furnished rations by the Department of the Interior.

Estimate made by D. J. B.

Checked by.....

Date, Nov. 25, 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 101-H.  
SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name:* Purchase of subsistence  
Supplies for issue as rations to Indians with Army as guides and scouts.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....			
Reserves.....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS: \$	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OF METHOD OF DETERMINING COST BASIS:
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

No estimate under this item, as the amount is negligible.

Estimate made by.....      Checked by.....      Date.....

(For additional space, use additional sheets of this size.)

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F. 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION. Item No. 101-I

## SUBSISTENCE.

*Appropriation:* Subsistence of the Army. *Item name:* Purchase of subsistence supplies for issue as rations to general prisoners at posts.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	2,500	366 days.....	915,000
Reserves.....			

Total requirements..... 915,000

## Deductions:

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$0.5302.	Total deductions.....	
	Net requirements.....	915,000
	Total cost of net requirements.....	\$485,133

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

The value of the ration for the United States is based on the latest available average cost of ration, 0.482, plus 10 per cent to cover the constant increase in cost component and substitutive articles.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

It is estimated that the number of general prisoners in the Army will be one-half of 1 per cent of the total strength. These rations are issued to general prisoners of the Army at posts, camps, etc.

Estimate made by D. J. B. Checked by..... Date: Nov. 25, 1918.

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.    Item No. 102-A.  
SUBSISTENCE.

*Appropriation:* Subsistence of the Army.    *Item name:* For the subsistence of the masters of the vessels of the Army Transport Service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	39	366 days.....	14, 274
Reserves.....			
Total requirements.....			14, 274

Deductions:			
		Estimated quantity on hand July 1, 1919.....	
COST BASIS \$1.25:	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements.....		\$17, 842. 50

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which it is estimated masters will be subsisted.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Fixed by Army Regulations.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:  
Embarkation Service.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
It is estimated that there will be 39 vessels operated by the Army during the fiscal year 1920. This item provides for one master on each vessel who messes in the saloon mess at the authorized rate of \$1.25 per day. The amount asked for is a reduction over that asked for in the estimate for the fiscal year 1919, for the reason that a large number of boats of the Army Transport Service have been turned over to the Navy Department for operation.

Estimate made by.....    Checked by.....    Date, Nov. 25, 1918.  
(For additional space, use additional sheets of this size.)

ITEM No. 102-A.

FOR THE SUBSISTENCE OF THE MASTERS OF THE VESSELS OF THE  
ARMY TRANSPORT SERVICE.

The amount of this estimate is the same as was originally submitted for the fiscal year, 1920, and it was requested by the Transport Branch that the same figures be used for this revised estimate.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.   Item No. ....

SUBSISTENCE.

Appropriation: Subsistence of the Army.   Item name: For the subsistence of the officers of vessels in the Army Transport Service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	{ 234 468	366 days, at \$1.25 . . . . .	85, 644
Reserves . . . . .		366 days, at \$1.00 . . . . .	171, 288
Total requirements . . . . .			256, 932

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS: \$1. 25 and \$1.	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		256, 932
	Total cost of net requirements.....		278, 343

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which it is estimated officers of transports will be subsisted.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Fixed by Army Regulations.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
  
6 officers per vessel, at \$1.25 per day; 12 officers per vessel, at \$1 per day; per the Chief of Embarkation Service.  
This item is based on 6 officers on each transport who mess in the saloon mess at the authorized rate of \$1.25 per day and 12 ship's officers for each transport who mess in the ship's officers' mess at the authorized rate \$1 per day.
- Estimate made by.....   Checked by.....   Date, Nov. 25, 1918.
- (For additional space, use additional sheets of this size.)

## ITEM No. 102-B.

FOR THE SUBSISTENCE OF THE OFFICERS OF VESSELS IN THE ARMY  
TRANSPORT SERVICE.

The amount of this estimate is the same as was originally submitted for the fiscal year, 1920, and it was requested by the Transport Branch that the same figures be used for this revised estimate.

The six officers referred to, for whom subsistence is purchased at the rate of \$1.25 a day, are:

Chief steward.  
First officer.  
Second officer.

Third officer.  
Fourth officer.  
Fifth officer.

The 12 officers referred to, for whom subsistence is purchased at the rate of \$1 a day, are:

1 chief engineer.  
1 assistant engineer.  
1 second assistant engineer.  
2 third assistant engineers.  
1 refrigerating engineer.  
1 assistant refrigerating engineer.

Second steward.  
Third steward.  
1 electrician.  
1 storekeeper.  
1 yeoman.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 102—C.

## SUBSISTENCE.

*Appropriation:* Subsistence of the Army. *Item name:* For the subsistence of the crews of the vessels of the Army Transport Service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	{ 39	366 days at \$1.00.....	14, 274
Reserves.....	4, 056	366 days at \$0.70.....	1, 484, 496
Total requirements.....			1, 498, 770

## Deductions:

Estimated quantity on hand July 1, 1919.....	.....
COST BASIS: Estimated salvage and reclamation.....	.....
\$1.00 and \$0.70. Total deductions.....	.....
Net requirements.....	1, 498, 770
Total cost of net requirements.....	\$1, 053, 421. 20

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Actual number of days for which it is estimated crews of transports will be subsisted.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Fixed by Army Regulations.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

## 5. REMARKS:

The Chief of Embarkation Service estimates that there will be 105 men per vessel. This item is based on 1 man in the ship's officers' mess at \$1 per day and 104 members of the crew in the petty officers' mess and the sailors' and firemen's mess at 70 cents per day. The man referred to is the freight clerk carried on each transport.

Estimate made by..... Checked by..... Date: Nov. 25, 1918.

(For additional space: use additional sheets of this size.)

ITEM No. 102—C.

FOR THE SUBSISTENCE OF THE CREWS OF THE VESSELS OF THE ARMY  
TRANSPORT SERVICE.

The amount of this estimate is the same as was originally submitted for the fiscal year 1920, and it was requested by the Transport Branch that the same figures be used for this revised estimate.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 102-D.  
SUBSISTENCE.

Appropriation: Subsistence of the Army.      Item name: For subsistence of employees  
of vessels of Army Transport Service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	78	366 days.....	28,548
Reserves.....			
Total requirements .....			28,548

Deductions:	
Cost basis:	Estimated quantity on hand July 1, 1919.....
\$1.25.	Estimated salvage and reclamation.....
	Total deductions.....
	Net requirements.....
	Total cost of net requirements..... \$35,685.00

\*"Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which it is estimated employees of transports will  
be subsisted.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Fixed by Army Regulations.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
This item covers two employees for each transport, quartermaster agent, and  
quartermaster clerk. The Army Transport Regulations directs that these  
men be messed in the saloon mess, the cost of which is \$1.25 per day.

Estimate made by.....      Checked by.....      Date: Nov. 25, 1918.

ITEM No. 102-D.

FOR SUBSISTENCE OF EMPLOYEES OF VESSELS OF ARMY TRANSPORT  
SERVICE.

The amount of this estimate is the same as was originally sub-  
mitted for the fiscal year 1920, and it was requested by the Trans-  
port Branch that the same figures be used for this revised estimate.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F. 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 103.

SUBSISTENCE.

Appropriation: Subsistence of the Army. Item name: Hot coffee for troops traveling when supplied with cooked or travel rations.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	511	366 days.....	187,026
Reserves.....			
Total requirements.....			187,026

Deductions:	
Cost Basis:	Estimated quantity on hand July 1, 1919.....
\$0.21.	Estimated salvage and reclamation.....
	Total deductions.....
	Net requirements..... 187,026.00
	Total cost of net requirements..... \$39,275.46

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which rations will be required.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Troops when traveling in groups are supplied with cooked rations for short journeys or travel rations on journeys exceeding 24 hours. When it is impracticable for these men to prepare their own coffee while on these journeys regulations provide payment of 21 cents per day with which to purchase hot coffee.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE.
5. REMARKS:  
Based on previous experience it is estimated that 102.2 men in 100,000 will use hot coffee.

Estimate made by D. J. B. Checked by..... Date November 25, 1918.  
(For additional space, use additional sheets of this size.)

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION. Item No. 104-A.

## SUBSISTENCE.

Appropriation: Subsistence of the Army. Item name: Meals for recruiting parties.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	6,000	366 days.....	2,196,000
Reserves.....			

Total requirements.....	2,196,000
-------------------------	-----------

## Deductions:

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$1.50.	Total deductions.....	
	Net requirements.....	2,196,000
	Total cost of net requirements.....	\$3,294,000

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Actual number of days for which meals will be required.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Cost of these meals are generally furnished under contracts which average \$1.50 per day per man.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

## 5. REMARKS:

The Adjutant General of the Army estimates that there will be 2,000 recruiting parties during fiscal year 1920. Recruiting parties will average 3 men to a party, or a total of 6,000 men for the entire year.

Estimate made by..... Checked by..... Date, Nov. 27, 1918.

(For additional space; use additional sheets of this size.)

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION. Item No. 104-B.

## SUBSISTENCE.

*Appropriation:* Subsistence of the Army. *Item name:* Meals for applicants for enlistment under observation.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	525, 000	1½ days.....	787, 500
Total requirements.....			787, 500

## Deductions:

	Estimated quantity on hand July 1, 1919.....	.....
COST BASIS:	Estimated salvage and reclamation.....	.....
\$1.50	Total deductions.....	.....
	Net requirements.....	787, 500
	Total cost of net requirements.....	\$1, 181, 250

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Average number of days for which each applicant for enlistment is subsisted.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Fixed by Army Regulations.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:

The Adjutant General of the Army states that it will be necessary to recruit 175,000 men during fiscal year 1920. The average number of applicants accepted is shown by former experience and records to be about 1 in 3. This would make a total of 525,000 men to be subsisted for 1½ days.

Estimate made by ..... Checked by..... Date, Nov. 25, 1918.  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 104-C.  
SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name:* Meals for enlisted men reporting without means.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
Cost BASIS:	Estimated salvage and reclamation.....		.....
\$	Total deductions.....		.....
	Net requirements.....		.....
	Total cost of net requirements.....		.....

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
No estimate submitted, as the cost of meals for men reporting without means is charged against them and deducted from their pay.

Estimate made by D. J. M.      Checked by.....      Date: Nov. 25, 1918.  
(For additional space, use additional sheets of this size.)

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION. Item No. 105-A.

SUBSISTENCE.

*Appropriation:* Subsistence of the Army. *Item name:* Subsistence supplies for sales to officers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....
Reserves.....	.....	.....	.....

Total requirements:

Deductions:		
COST BASIS: \$	Estimated quantity on hand July 1, 1919.....	.....
	Estimated salvage and reclamation.....	.....
	Total deductions.....	.....
	Net requirements.....	.....
Total cost of net requirements.....		\$50,000.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Par. 1239, A. R., 1913, provides that sales of subsistence stores may be made at cost prices for cash to an officer on his certificate that the stores are for his personal or family use or for the use of an officers' mess of which he is the caterer. Funds received from such sales are available to replace the stores sold. Authorized by section 1144, R. S., and act of March 3, 1875 (18 Stat., 410).

5. REMARKS:

The articles are paid for by the officers from their private funds, and when sales are made the appropriation is reimbursed. The amount estimated is to provide a fund to purchase these supplies.

Estimate made by D. J. B. Checked by..... Date, Nov. 25, 1918.

(For additional space; use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.    Item No. 105-B.  
SUBSISTENCE.

Appropriation: Subsistence of the Army.    Item name: Subsistence supplies for sales to enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....
Reserves.....	.....	.....	.....

Total requirements:

Deductions:		
Cost Basis: \$	Estimated quantity on hand July 1, 1919.....	.....
	Estimated salvage and reclamation.....	.....
	Total deductions.....	.....
	Net requirements.....	.....
Total cost of net requirements.....		\$175,000.00

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Par. 1241, A. R., 1913, provides that sales of reasonable quantities of stores may be made to an enlisted man on the active or retired list, for cash, upon his declaration in writing that they are intended for his own use. Funds received from such sales are available to replace the stores sold. Authorized by section 1144, R. S., and act of March 4, 1875 (18 Stat., 410).

5. REMARKS:  
This estimate is for the purchase of supplies for sales to enlisted men and the appropriation will be reimbursed when the sales are made. The articles are paid for by the enlisted men from their private funds. The amount estimated is to provide a fund to purchase these supplies.

Estimate made by.....    Checked by.....    Date, Nov. 25, 1918.  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 105-C  
SUBSISTENCE.

Appropriation: Subsistence of the Army.      Item name: Subsistence supplies  
for sales to the Navy.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....			
Reserves.....			

Total requirements:

Deductions:		
COST BASIS:	Estimated quantity on hand July 1, 1919 ...	
	Estimated salvage and reclamation.....	
	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
No estimate submitted.

Estimate made by D. J. M.      Checked by.....      Date Nov. 25, 1918.  
(For additional space; use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 107-A.  
SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name:* Commutation of rations to  
cadets at United States Military Academy.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1, 000	366 days.....	366, 000
Reserves.....			
Total requirements.....			366, 000

Deductions:		
	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$0.68.	Total deductions.....	
	Net requirements.....	366, 000
	Total cost of net requirements.....	\$248, 840

\* "Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which it is estimated rations will be required.
2. STATE THE SOURCE OF METHOD OF DETERMINING COST BASIS:  
Rate fixed by law. Army appropriation act for the fiscal year 1919, approved  
July 9, 1918.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:

The number of cadets at the Military Academy for the fiscal year 1920, it is  
estimated, will be 1,000.

Estimate made by D. J. B.      Checked by.....      Date, November 25, 1918.  
(For additional space, use additional sheets of this size.)



ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 107-B.

SUBSISTENCE.

Appropriation: Subsistence of the Army.

Item name: For payment commutation rations to enlisted men on furlough.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	10, 000	366 days.....	3, 660, 000
Reserves.....			

Total requirements.....

3, 660, 000

Deductions:

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$0. 40.	Total deductions.....	
	Net requirements.....	3, 660, 000
	Total cost of net requirements.....	\$1, 464, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- Actual number of days for which it is estimated commutation of rations will be required.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- Fixed by Army regulations.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:
- This estimate is based on 2 per cent of the total number of troops as per former experience. These funds are required for the payment of commutation of rations to men while they are on furlough and during which time they do not subsist on the Army ration.

Estimate made by D. J. B.

Checked by.....

Date, Nov. 25, 1918.

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 107-A.

## SUBSISTENCE.

*Appropriation:* Subsistence of the Army. *Item name:* Commutation of rations to cadets at United States Military Academy.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	1,000	366 days.....	366,000
Reserves.....			
Total requirements.....			366,000

## Deductions:

	Estimated quantity on hand July 1, 1919.....	
Cost BASIS:	Estimated salvage and reclamation.....	
\$0.68.	Total deductions.....	
	Net requirements.....	366,000
	Total cost of net requirements.....	\$248,880

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Actual number of days for which it is estimated rations will be required.

## 2. STATE THE SOURCE OF METHOD OF DETERMINING COST BASIS:

Rate fixed by law. Army appropriation act for the fiscal year 1919, approved July 9, 1918.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

## 5. REMARKS:

The number of cadets at the Military Academy for the fiscal year 1920, it is estimated, will be 1,000.

Estimate made by D. J. B. Checked by..... Date, November 25, 1918.

(For additional space, use additional sheets of this size.)

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 107-B.

## SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name:* For payment commutation rations to enlisted men on furlough.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	10, 000	366 days.....	3, 660, 000
Reserves.....			

Total requirements..... 3, 660, 000

## Deductions:

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$0. 40.	Total deductions.....	
	Net requirements.....	3, 660, 000
	Total cost of net requirements.....	\$1, 464, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Actual number of days for which it is estimated commutation of rations will be required.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Fixed by Army regulations.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

## 5. REMARKS:

This estimate is based on 2 per cent of the total number of troops as per former experience. These funds are required for the payment of commutation of rations to men while they are on furlough and during which time they do not subsist on the Army ration.

Estimate made by D. J. B.      Checked by.....      Date, Nov. 25, 1918.

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F. 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 107-C  
SUBSISTENCE.

Appropriations: Subsistence of the Army.      Item name: Commutation of rations  
to enlisted men.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	{ 250 5, 500	366 days, at \$1.25.....	91, 500
Reserves.....		366 days, at \$2.25.....	2, 013, 000
Total requirements.....			2, 104, 500
Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation.....		
\$1.25.	Total deductions.....		
\$2.25.	Net requirements.....		2, 104, 500
	Total cost of net requirements.....		\$4, 643, 625

\* "Working basis" is the quantity required per man or per unit for stated period:  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which it is estimated commutation of rations will  
be required.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Rates fixed by Army Regulations.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
It is estimated that there are 250 men stationed at places at which rations  
can not be economically issued, but will draw a commutation rate of \$1.25.  
Based on previous experience, it is estimated that the number of enlisted  
men and sick and insane soldiers traveling under orders is 1.1 per cent of  
the total number of troops. This will give a total of 5,500 men.

Estimate made by.....      Checked by.....      Date: Nov. 25, 1918.

JANUARY 6, 1919.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 107-D.

SUBSISTENCE DIVISION.

*Appropriation:* Subsistence of the Army. *Item name:* Commutation of rations to male and female nurses.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	62	366 days, at 1.25 per day.	22, 692
Reserves.....			

Total requirements . . . . . 22, 692

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation .....		
\$1.25.	Total deductions.....		
	Net requirements.....		22, 692
	Total cost of net requirements .....		\$28, 365.00

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Actual number of days for which commutation will be required.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Fixed by Army Regulations.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

The Medical Department states that these nurses will be on detached duty, and Army Regulations provide for payment of commutation of rations at \$1.25 per day to male and female nurses on detached duty stationed at a city or town where subsistence is not furnished by the Government.

Estimate made by..... Checked by..... Date.....

(For additional space, use additional sheets of this size.)

DECEMBER 30, 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 107-E.  
SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name:* Commutation of rations to enlisted men selected to contest at Army rifle competitions.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	2, 091	3 days.....	6, 273
Reserves.....			

Total requirements:..... 6, 273

Deductions:			
		Estimated quantity on hand July 1, 1919.....	
Cost BASIS: \$2.25.	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		6, 273
	Total cost of net requirements.....		\$14, 114. 25

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which commutation of rations will be required.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Fixed by Army Regulations.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
There was no appropriation under this item for the fiscal year, 1919, as rifle competition was discontinued on account of the war.  
For the fiscal year 1917 the sum of \$2,737.50 was appropriated, based on an attendance of 697 men at the then commutation rate of \$1.50 per man per day. Some of the men attended 5 days, some 3 days, and some 2 days. The same amount was appropriated for the fiscal year, 1918.  
For an Army of 500,000 men, or three times as large as the Army was then, the number attending would be 2,091 men. At the present commutation rate of \$2.25 per man per day and taking the average attendance at three days, the amount required would be \$14,114.25.

Estimate made by .....      Checked by .....      Date .....  
(For additional space, use additional sheets of this size.)

JANUARY 6, 1919.

ESTIMATE FOR  
EQUIPMENT, MATERIAL AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 107-F

SUBSISTENCE DIVISION.

*Appropriation:* Subsistence of the Army.      *Item name:* Commutation of rations to male and female nurses on leave of absence.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	188	366 days, at \$0.40.....	68,808
Reserves.....			
Total requirements.....			68,808

**Deductions:**

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$0.40	Total deductions.....	
	Net requirements.....	68,808
	Total cost of net requirements.....	\$27,523.20

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Actual number of days for which commutation will be required.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Fixed by Army Regulations.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

## 5. REMARKS:

The Medical Department estimates that 188 nurses will be on leave of absence for the fiscal year 1920, and be paid commutation of rations.

Estimate made by..... Checked by..... Date.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F. 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 107-G.  
SUBSISTENCE.

*Appropriation:* Subsistence of the Army.    *Item name:* Commutation of rations to applicants for enlistment traveling under orders.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	15	366 days.....	5,490
Reserves.....			
Total requirements.....			5,490

Deductions:			
		Estimated quantity on hand July 1, 1919 .....	.....
COST BASIS: \$2.25.	Estimated salvage and reclamation .....		.....
	Total deductions.....		.....
	Net requirements.....		5,490
	Total cost of net requirements .....		\$12,352.50

\* "Working basis " is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Number of days in which it is estimated commutation of rations will be paid.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Fixed by Army Regulations.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
It is estimated that the number of applicants for enlistment who will draw commutation while traveling under orders average 3 to 100 000 men for 366 days, or 15 for 500,000 men.

Estimate made by.....      Checked by.....      Date: Nov. 27, 1918.



ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 19—.

PURCHASE AND STORAGE DIVISION.     Item No. 107-H.

SUBSISTENCE.

*Appropriation:* Subsistence of the Army.     *Item name:* Commutation of rations to general prisoners while traveling under orders.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	.....	.....	.....
Reserves .....	.....	.....	.....

Total requirements:

Deductions:		
COST BASIS: \$	Estimated quantity on hand July 1, 1919.....	.....
	Estimated salvage and reclamation .....	.....
	Total deductions.....	.....
	Net requirements.....	.....
Total cost of net requirements .....		\$21, 633. 42

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:

The sum of \$7,211.14 was expended for commutation of rations to general prisoners while traveling under orders during the fiscal year 1917, for an Army of one quarter of a million, based on a commutation rate of \$1.50 per day.  
For an Army of 500,000 men, based on the present commutation rate of \$2.25 per day, this amount would be \$21,633.42.

Estimate made by.....Checked by.....     Date .....

..     (For additional space, use additional sheets of this size.)

JANUARY 6, 1919.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 107-I.  
SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name:* Commutation of rations for members of Nurse Corps (female) while on duty at hospitals.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	{ 400 1, 600	366 days, at 72.3 cents. .	146, 400
Reserves.....		366 days, at 67.48 cents.	585, 600
Total requirements.....			732, 000

Deductions:	
Estimated quantity on hand July 1, 1919.....	.....
COST BASIS: Estimated salvage and reclamation.....	.....
\$0.723. Total deductions.....	.....
\$0.6748. Net requirements.....	732, 000. 00
Total cost of net requirements.....	\$501, 010. 08

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Fixed by Army Regulations. "A. R. 1212 (as changed by C. A. R. 82)."
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:

The Medical Department estimates 2,250 members of the Nurse Corps (female) for the fiscal year 1920 for whom commutation of rations will be required. Of these, 400 will be on duty at tuberculosis hospitals and 1,600 will be on duty at general post hospitals and miscellaneous stations. Of the remaining 250, 188 will be on leave of absence and 62 will be on detached duty. These are estimated for under 107-F and 107-D, respectively.

Estimate made by..... Checked by..... Date.....  
(For additional space, use additional sheets of this size.)

COMMUTATION RATES OF ENLISTED MEN WHILE SICK IN HOSPITAL, AND MEMBERS OF THE NURSE CORPS ON DUTY IN HOSPITALS.

[C. A. R. 82.]

1212. (Changed by C. A. R. No. 66, W. D., 1917.) While sick in hospital the ration of enlisted men, of applicants for enlistment, of civilian employees who are entitled to subsistence at public expense, and of prisoners will be commuted as follows:  
For all hospitals for tuberculosis patients, regardless of bed capacity, at the actual cost of the ration plus 50 per cent.

For other hospitals: Those having a bed capacity of 100 or less, at the actual cost of the ration plus 50 per cent; those having a capacity of more than 100, but less than 500, at the actual cost of the ration plus 40 per cent; those having a capacity of 500 or more, but less than 1,000, at the actual cost of the ration plus 30 per cent; those having a capacity of 1,000 or more, at the actual cost of the ration plus 25 per cent.

The ration of members of the Nurse Corps on duty in hospital will be commuted at the rate applicable to patients therein.

The commutation herein referred to will be paid to the surgeon by the post quarter master, or such officer of the Quartermaster Corps as may be designated.

(C. A. R. No. 82, Nov. 4, 1918.)

[300.31, A. G. O.]

WAR DEPARTMENT,  
OFFICE OF THE SURGEON GENERAL,  
Washington, November 30, 1918.

From: The Surgeon General of the Army.

To: The Director of Finance

(Attention Maj. James MacKay, Quartermaster Corps).

Subject: Revised estimate, fiscal year 1920.

Replying to the request of November 20, for information based on the assumption that the Army will consist of 500,000 enlisted men in the United States and insular possessions, the following figures are submitted:

\* \* \* \* \*

(d) Number of nurses and rates of pay: Number of nurses, 2,250; rates of pay, see attached memorandum.

By direction of the Surgeon General:

(Signed.)

R. B. MILLER,  
Colonel, M. C., U. S. A.  
det/oab

WAR DEPARTMENT,  
OFFICE OF THE SURGEON GENERAL,  
Washington, December 2, 1918.

Memorandum for the Surgeon General:

In re estimate for the pay of the Army Nurse Corps for the fiscal year 1920, based on the assumption that the Army will consist of 500,000 enlisted men in the United States and its insular possessions.

Provision is to be made for a 4½ per cent bed capacity = 22,500 beds; 1 nurse to 10 patients = 2,250 nurses.

ESTIMATE.

	Per annum.
Base pay.....	2,250 at \$720
Foreign service pay.....	50 at 120
Chief nurse pay.....	150 at 360
Service pay, over 3 years.....	115 at 60
Service pay, over 6 years.....	38 at 120
Service pay, over 9 years.....	20 at 180
Service pay, over 12 years.....	18 at 240
1 superintendent, Army Nurse Corps.....	2,400
6 assistant superintendents.....	1,800

(Signed)

DORA E. THOMPSON,  
Superintendent, Army Nurse Corps.

W. H. SMITH,  
Colonel, Medical Corps, U. S. A.

JANUARY 3, 1919.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 107-J.

SUBSISTENCE.

*Appropriation:* Subsistence of the Army. *Item name:* Commutation of rations to enlisted men sick in hospitals.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	{ 4,000	366 days, at 72.3 cents..	1,464,000
Reserves.....	{ 18,500	366 days, at 67.48 cents..	6,771,000
Total requirements.....			8,235,000

## Deductions:

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$0.723.	Total deductions.....	
\$0.6748.	Net requirements.....	8,235,000
	Total cost of net requirements.....	\$5,627,542.80

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Actual number of days for which commutation of rations will be required.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Fixed by Army Regulations "A. R. 1212 (as changed by C. A. R. 82.)" The rate of 72.3 cents is based on the cost of the ration "48.2 cents," plus 50 per cent and is for tuberculosis patients. The rate of 67.48 cents is based on the cost of the ration plus 40 per cent, the basis estimated by the Medical Department for all other patients.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

## 4. REMARKS:

The Medical Department estimates that 4½ per cent of the strength of the Army, or 22,500 men, will be sick in hospitals during the fiscal year 1920, of whom 4,000 will be tuberculosis patients.

The Medical Department also states that all other patients except tuberculosis patients should be estimated at 40 per cent increase on the ration, the allowance for hospitals having a capacity of between 100 and 500 beds.

(For additional space use additional sheets of this size.)

DECEMBER 31, 1918.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920

PURCHASE AND STORAGE DIVISION.

Item No. 107-K.

SUBSISTENCE.

*Appropriation:* Subsistence of the Army. *Item name:* Commutation of rations for applicants for enlistment under observation.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....
Reserves.....	.....	.....	.....
Total requirements:			
Deductions:			
Estimated quantity on hand July 1, 1919.....			
Estimated salvage and reclamation.....			
Total deductions.....			
Net requirements.....			
Total cost of net requirements.....			

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
2. STATE THE SOURCE OF METHOD OF DETERMINING COST BASIS:
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:

No estimate submitted, as nothing is desired under this item.

When a man is accepted for enlistment pending final examination, he is frequently held under observation for several days in order to determine his fitness. While at a recruiting station, meals are furnished him. When forwarded to recruit depot, he is rationed in kind.

Estimate made by..... Checked by..... Date.....

(For additional space, use additional sheets of this size.)

JANUARY 3, 1919.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION. Item No. 107-L.  
SUBSISTENCE.

Appropriation: Subsistence of the Army. Item name: Commutation of rations to  
general prisoners sick in hospitals.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	112	366 days.....	40, 992
Reserves.....			
Total requirements.....			40, 992

Deductions:			
		Estimated quantity on hand July 1, 1919.....	
COST BASIS: \$0.6748.	Estimated salvage and reclamation.....		
	Total deductions.....		
	Net requirements.....		40, 992
	Total cost of net requirements.....		\$27, 661. 40

\*"Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which commutation of rations will be required.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Fixed by Army Regulations "A. R. 1212 (as changed by C. A. R. 82)."
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. REMARKS:  
The Adjutant General's Office estimates the number of prisoners sick in hos-  
pitals to be 3½ per cent of the number of general prisoners, but as the Surgeon  
General's Office estimates number of sick for the entire Army to be 4½ per  
cent, this estimate is based on the latter figure. The number of general  
prisoners is estimated by the Adjutant General's Office to be one-half of 1  
per cent of the strength of the Army. This would be 2,500 men, and 4½ per  
cent of this amounts to 112 men. The commutation is paid to the surgeon  
in charge, and not to the patients. Army Regulations, 1212, 1443.

Date..... Checked by..... Estimate made by.....  
(For additional space, use additional sheets of this size.)

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 108.

**SUBSISTENCE.**

*Appropriation:* Subsistence of the Army.      *Item name:* Advertising.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....
Reserves.....	.....	.....	.....

Total requirements:

**Deductions:**

	Estimated quantity on hand July 1, 1919.....	.....
COST BASIS:	Estimated salvage and reclamation.....	.....
\$	Total deductions.....	.....
	Net requirements.....	.....
	Total cost of net requirements.....	\$3,304.00

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:

The sum of \$1,652.15 was expended during the fiscal year 1917 for an Army of 250,000. Increasing of this amount in proportion to the size of an Army of 500,000 men would call for \$3,304.

Estimate made by..... Checked by..... Date.....

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION. Item No. 109.

## SUBSISTENCE.

*Appropriation:* Subsistence of the Army. *Item name:* Prizes to be established by the Secretary of War for enlisted men of Army who graduate from Army Schools for Bakers and Cooks.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	10
Reserves.....	.....	.....	.....
Total requirements.....	.....	.....	10

## Deductions:

	Estimated quantity on hand July 1, 1919.....	.....
COST BASIS:	Estimated salvage and reclamation.....	.....
\$150.	Total deductions.....	.....
	Net requirements.....	10
	Total cost of net requirements.....	\$1,500

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
See attached memorandum.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:

Figuring on basis of 500,000 men during the fiscal year 1920, The Adjutant General's Office states that the closest estimate that can be made for schools for bakers and cooks is to figure on 10 schools.

Estimate made by D. J. B.      Checked by.....      Date, Nov. 25, 1918.

## ITEM No. 109.

**PRIZES TO BE ESTABLISHED BY SECRETARY OF WAR FOR ENLISTED MEN OF ARMY WHO GRADUATE FROM ARMY SCHOOLS FOR BAKERS AND COOKS.**

Under date of January 12, 1906, the Commissary General recommended to the Secretary of War, in order to stimulate the interest of the enlisted men who are students in the schools for bakers and cooks, that small monetary prizes be offered the men in each gradu-



ating class who pass the best competitive examination and requested that Congress be asked to provide the amount of \$900 in the next annual appropriation bill for this purpose. This was approved and a clause covering it inserted in the appropriation bill for the fiscal year 1907, the prizes to be established by the Secretary of War.

The Secretary of War, under date of July 12, 1906, approved the following recommendation of the Commissary General:

That \$150 be allotted for each of the six graduations from the school during the year. Each allotment of \$150 to be divided among the several schools pro rata, according to the number of enlisted men, bakers and cooks, graduated each term. The amount thus allotted each school for its graduating class of cooks and bakers to be divided into prizes as follows:

Three-tenths of such amount as first prize for cooks, three-tenths of such amount as first prize for bakers, two-tenths of such amount as second prize for cooks, two-tenths of such amount as second prize for bakers; and under date of June 11, 1907, the officers in charge of the various schools were informed that the following rules had been adopted for awarding of prizes to the graduates in baking and cooking upon completion of their respective courses.

Bakers:

First prize.....	\$15.00
Second prize.....	10.00

Cooks:

First prize.....	15.00
Second prize.....	10.00

The sizes of the different classes not to affect the amount of the prize provided the degree of efficiency obtained by the prize winner is such as to warrant a prize being given. In certain cases, even in a large class, the degree of efficiency obtained by the first men might not be so high as to warrant a prize, and in these cases a second prize should be awarded, or, if the conditions warranted it, none at all, so that the question of prizes is in the direction of the officers in charge.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F. 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. ....

SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name:* Other necessary expenses incident to purchases, testing, care, preservation, issue, sale, and accounting for subsistence supplies for the Army.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....			
Reserves.....			

Total requirements:

Deductions:		
	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$	Total deductions.....	
	Net requirements.....	
	Total cost of net requirements.....	\$210, 565. 98

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
This item, among other things, provides for twine, paper bags, cotton bags, excelsior for packing cases, lumber, salt for rebrining, testing apparatus, testing materials, grinding, roasting, and repacking coffee, electric power for bakeries, kitchen car service, cost of oaths pertaining to contracts for subsistence supplies, and all other miscellaneous expenses pertaining to the appropriation not otherwise provided for. The sum of \$105,282.99 was expended under this item during the fiscal year 1917 for an Army of one-quarter of a million. This would call for an increase of twice that amount for an Army of 500,000 men.

Estimate made by.....      Checked by.....      Date, Nov. 25, 1918.  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORATE DIVISION.   Item No. 110-A.

SUBSISTENCE.

Appropriation: Subsistence of the Army.   Item name: Customs duties on sub-  
sistence supplies.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....
Reserves.....	.....	.....	.....

Total requirements:

Deductions:		
Estimated quantity on hand July 1, 1919.....		
COST BASIS:	Estimated salvage and reclamation.....	.....
\$	Total deductions.....	.....
	Net requirements.....	.....
	Total cost of net requirements.....	\$5,000.00

\*"Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. REMARKS:  
For Philippine Islands and should be approximately the same as 1918. Items on which customs duties are ordinarily collected in the Philippine Islands are currants, gelatin, handkerchiefs, tapioca, puffed rice, nutmegs, and linen textiles. If matches, tobacco, and toilet preparations (in which, exclusive of water, alcohol forms the principal ingredient), are not purchased by the Government in the Philippines; they would be subject to duty if procured in this country and sent to the Philippines. No reduction has been made in this item as it is not known how much will be required for the balance of the fiscal year.

Estimate made by .....   Checked by .....   Date Nov. 25, 1918.  
(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 110-B.

SUBSISTENCE.

*Appropriation:* Subsistence of the Army.      *Item name:* Losses on subsistence stores.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....			
Reserves.....			

Total requirements:

Deductions:			
		Estimated quantity on hand July 1, 1919.....	
Cost BASIS:		Estimated salvage and reclamation.....	
	\$	Total deductions .....	
		Net requirements.....	
		Total cost of net requirements.....	\$904, 831. 26

\*“Working basis” is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on 1 per cent subsistence purchased, which is \$90,843,126.10.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1. 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
This is to cover deterioration, breakage of packages, etc. It does not include losses from fires or ship sinkings. When losses occur the supplies are taken up and dropped in accordance with paragraphs 2171 and 2172, Manual for the Quartermaster Corps, U. S. Army.

Estimate made by.....      Checked by.....      Date: Nov. 25, 1918.  
(For additional space; use additional sheets of this size.)

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 110-C.

SUBSISTENCE.

Appropriation: Subsistence of the Army.      Item name: Hire of employees.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....			
Reserves.....			

Total requirements:

Deductions:

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$1,400.	Total deductions.....	
\$1,500.	Net requirements.....	
\$1,200.	Total cost of net requirements.....	\$10, 100. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:

Meat inspectors are now officers or enlisted men, or are furnished by the Medical Department or by the Department of Agriculture. This estimate is for 1 inspector at \$1,400, 1 at \$1,500, and 6 at \$1,200. They are appropriated for annually.

Estimate made by.....      Checked by.....      Date: Nov. 25, 1918.

(For additional space, use additional sheet of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION. Item No. 119.

SUBSISTENCE.

Appropriation: Regular supplies. Item name: Candles.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	1 pound for each 100 men 366 days.	1,830,000
Reserves.....			
Total requirements.....			1,830,000

Deductions:		
	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$0.157	Total deductions.....	
per lb.	Net requirements.....	1,830,000
	Total cost of net requirements.....	\$(287,310.00)
		\$100,000.00

\*“Working basis” is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Quantity based on 1 pound per 100 men per day per former experience.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Price is based on actual cost. The quantity of 1,830,000 pounds at .157 cents per pound amounts to \$287,310, but it is not believed that this amount will be needed, and therefore a flat estimate of \$100,000 is submitted.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. REMARKS:  
Candles are issued to organizations, stables, etc., when other illuminating supplies are not provided for, as follows:  
To organizations of enlisted men—  
For each ration, except the Filipino ration, 0.24 ounce. In Alaska, 0.32 ounce.  
For each Filipino ration, 0.12 ounce.  
To headquarters in the field of organizations larger than a company, to hospitals, bakeries, depots, of supply, guards, and telegraph stations—  
Such quantities as the commanding officer may order as necessary.

Estimate made by..... Checked by..... Date, Nov. 25, 1918.  
(For additional space; use additional sheets of this size.)

ITEM No. 119.

CANDLES.

Lantern candles.—For use in lanterns furnished to the Army by the Government service, such quantities as the commanding officer may order as necessary.

DECEMBER 27, 1918.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 120.

SUBSISTENCE.

*Appropriation:* Regular supplies.      *Item name:* Matches.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	$\frac{1}{2}$ box per man, 366 days.	91,500,000
Reserves . . . . .			

Total requirements . . . . .	91,500,000
------------------------------	------------

**Deductions:**

	Estimated quantity on hand July 1, 1919 . . . . .	
Cost BASIS:	Estimated salvage and reclamation . . . . .	
\$0.90	Total deductions . . . . .	
per gross.	Net requirements . . . . .	91,500,000
	Total cost of net requirements . . . . .	\$571,875

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

While in time of war it was found that  $\frac{1}{2}$  of a box per man per day was necessary, it is thought that under peace conditions  $\frac{1}{2}$  box per man per day will be sufficient.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Price is based on actual cost.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

## 4. REMARKS:

Matches are issued for lighting fires and lights, for which fuel and the illuminating supplies are issued in such quantities as the commanding officer may order as necessary. (See par. 1215, Army Regulations, 1913.)

Matches are issued to organizations under Army Regulations for the starting of kitchen fires and for lanterns in such quantities as the commanding officer directs as necessary. (Army Regulations, 1215.)

Estimate made by . . . . . Checked by . . . . . Date . . . . .

(For additional space; use additional sheets of this size)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F. 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 130.  
SUBSISTENCE.

Appropriation: Regular supplies.      Item name: Ice for issue to troops.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	1 pound per man per day; 366 days.	183,000,000
Reserves.....			
Total requirements.....			183,000,000

Deductions:		
Estimated quantity on hand July 1, 1919.....		
Cost BASIS:	Estimated salvage and reclamation.....	
\$0.35.	Total deductions.....	
	Net requirements.....	183,000,000
	Total cost of net requirements.....	\$640,500

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on 1 pound per man per day.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Price based on actual cost.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. REMARKS:  
Army Regulations call for:  
Detachment of 24 or under, 4 pounds per man per day.  
Detachments of 25 or 100, 100 pounds per organization per day.  
Detachments of over 100, 1 pound per man per day.  
For troops stationed north of the thirty-seventh parallel of north latitude and where from any cause it is impracticable to cut and store ice for their use. the allowance will be for seven months only, beginning April 1 and ending October 31.

Estimate made by.....      Checked by.....      Date, Nov. 25, 1918.  
(For additional space, use additional sheets of this size.)



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 132.

SUBSISTENCE.

*Appropriation:* Regular supplies.*Item name:* Ice for preservation of stores.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	$\frac{1}{4}$ pound per man per day, 366 days.	45,750,000
Reserves.....			
Total requirements.....			45,750,000

**Deductions:**

	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$0.35	Total deductions.....	
per 100 lbs.	Net requirements.....	45,750,000
	Total cost of net requirements.....	\$160,125

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Fixed by Army Regulations.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Price is based on actual cost.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. REMARKS:

Ice is used in Q. M. storehouses for preservation of perishable stores in such quantities as are actually necessary. It is estimated that it will require  $\frac{1}{4}$  pound per man per day. This item covers the procurement of ice for the preservation of subsistence stores of a perishable nature. Issues are authorized for this purpose in such quantities as the commanding officer may order as necessary, and the quantities required depend upon the necessities of the service.

Estimate made by..... Checked by..... Date, Nov. 25, 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION. Item No. 137.

SUBSISTENCE.

Appropriation: Regular supplies. Item name: Soap, issue.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	4 pounds for each 100 rations 366 days.	7, 320, 000
Reserves . . . . .			
Total requirements . . . . .			7, 320, 000

Deductions: •	
Estimated quantity on hand July 1, 1919 . . . . .	
Cost BASIS: Estimated salvage and reclamation . . . . .	
\$0.08 per lb. Total deductions . . . . .	
Net requirements . . . . .	7, 320, 000
Total cost of net requirements . . . . .	\$585, 600

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Quantity based on Army Regulations.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on actual cost.
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. REMARKS:  
The supplies purchased under this item consist of such soap as may be required for issue to the Army, as provided for in paragraph 1215, Army Regulations, 1913.  
Issues are authorized to organizations of enlisted men as follows: For each ration, 0.64 ounce.  
Under this item soap is also used for washing the laundry of enlisted men and in kitchens. A special allowance is usually authorized for guardhouse and military prisons; such amounts as are requested are authorized by the commanding officer.

Estimate made by..... Checked by..... Date.....

ITEM No. 137.

SOAP, ISSUE.

The supplies purchased under this item include soap for issue in bakeries and for use of prisoners in guardhouses and military prisons in such quantities as the commanding officer may order as necessary.  
In addition to the allowance of 4 pounds per 100 rations, in active campaign, 0.25 of an ounce, hand soap is issued for each ration to troops in the field in ounce cakes.  
The issue of 4 pounds per 100 rations is for kitchen and laundry purposes of the enlisted men.

DECEMBER 26, 1918.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 152

SUBSISTENCE.

*Appropriation:* Regular supplies.*Item name:* Salt for animals.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	119, 900	0.8 oz. per day for 366 days	2, 194, 170 lbs.
Reserves.....			

Total requirements..... 2, 194, 170 lbs.

**Deductions:**

Estimated quantity on hand July 1, 1919.....	
Cost Basis: Estimated salvage and reclamation.....	
75c. per 100 lbs. Total deductions.....	
Net requirements.....	2, 194, 170 lbs.
Total cost of net requirements.....	\$16, 456. 28

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Actual number of days for which salt will be required. Allowance of 0.8 oz. per day, fixed by Army Regulations.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Actual cost.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

## 5. REMARKS:

The General Staff estimates that there will be 71,500 horses and 48,400 mules on hand for the entire fiscal year 1920.

Estimate made by..... Checked by..... Date .....

(For additional space; use additional sheets of this size.)

DECEMBER 26, 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION. Item No. 153.

SUBSISTENCE.

Appropriation: Regular supplies. Item name: Vinegar for animals.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	119. 900	$\frac{1}{8}$ gill per day, 366 days .	137,136 gals.
Reserves.....	.....	.....	.....
Total requirements.....			137,136 gals.

Deductions:			
		Estimated quantity on hand July 1, 1919.....	.....
COST BASIS: \$0.32 per gal.	Estimated salvage and reclamation.....		.....
	Total deductions.....		.....
	Net requirements.....		137,136 gals.
	Total cost of net requirements.....		\$43, 883. 52

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Actual number of days for which vinegar will be required. Allowance of  $\frac{1}{8}$  gill per day fixed by Army Regulations.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Actual cost.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
The general staff estimates that there will be 71,500 horses and 48,400 mules on hand for the entire fiscal year 1920.

Estimate made by ..... Checked by ..... Date .....  
(For additional space, use additional sheets of this size.)

JANUARY 6, 1919.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 151.  
SUBSISTENCE DIVISION.

Appropriation: Item name: Forage in kind.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....
Reserves.....	.....	.....	.....

Total requirements:

Deductions:		
Estimated quantity on hand July 1, 1919.....		
COST BASIS:	Estimated salvage and reclamation.....	.....
\$	Total deductions.....	.....
	Net requirements.....	.....
	Total cost of net requirements.....	\$

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. REMARKS:

Recapitulation:	
Hay.....	\$9, 668, 439. 00
Oats for horses.....	7, 222, 644. 00
Oats for mules.....	3, 666, 880. 80

Total, forage in kind..... 20, 557, 963. 80

Estimate made by..... Checked by..... Date.....

(For additional space, use additional sheets of this size.)

Animals in the United States at the close of business Nov. 30, 1918.

On hand with—	Horses.		Mules.		Grand total.
	Cavalry.	Draft.	Draft.	Pack.	
Auxiliary and permanent remount depots.....	41, 560	47, 597	55, 074	8, 215	152, 446
Embarkation depots.....	693	4, 833	5, 753	356	11, 635
Divisions and organizations at camps.....	17, 231	17, 019	26, 730	947	61, 927
Departments (organizations at posts).....	25, 699	7, 884	10, 725	4, 853	49, 141
At purchasing points.....		47	2		49
In transit to camps.....		172	33		205
Total on hand Dec. 1, 1918.....	85, 183	77, 532	98, 317	14, 371	275, 403
To be retained.....	44, 000	27, 500	44, 000	4, 400	119, 900
Surplus.....	41, 183	50, 032	54, 317	9, 971	155, 503

Figures furnished by Remount Division.

DECEMBER 26, 1918.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 151.

SUBSISTENCE.

*Appropriation:* Regular supplies.*Item name:* Oats for horses.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	71, 500	366 days, at 12 lbs. per day.	314, 028, 000 lbs.
Reserves.....			
Total requirements.....			314, 028, 000 lbs.

**Deductions:**

	Estimated quantity on hand July 1, 1919.....	
<b>COST BASIS:</b>	Estimated salvage and reclamation.....	
2.3 cents.	Total deductions.....	
	Net requirements.....	314, 028, 000 lbs.
	Total cost of net requirements.....	\$7, 222, 644

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Fixed by Army Regulations at 12 lbs. per day.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Price taken from prevailing market October 1, 1918 (73 to 74 cents per bushel for standard white oats).

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

## 5. REMARKS:

The General Staff estimates that there will be 71,500 horses and 48,400 mules on hand for the entire fiscal year 1920.

Estimate made by..... Checked by..... Date.....

(For additional space, use additional sheets of this size.)

DECEMBER 26, 1918.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 151.

SUBSISTENCE.

*Appropriation:* Regular supplies.*Item name:* Oats for mules.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	48, 400	366 days, at 9 lbs. per day	159, 429, 600 lbs.
Reserves.....			

Total requirements..... 159, 429, 600 lbs.

**Deductions:**

	Estimated quantity on hand July 1, 1919.....	
Cost BASIS:	Estimated salvage and reclamation.....	
2.3c.	Total deductions.....	
	Net requirements.....	159, 429, 600 lbs.
	Total cost of net requirements.....	\$3, 666, 880. 80

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Fixed by Army Regulations at 9 lbs. per day.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Price taken from prevailing market Oct. 1, 1918 (73c. to 74c. per bushel for standard white oats).

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

The General Staff estimates that there will be 71,500 horses and 48,400 mules on hand for the entire fiscal year 1920.

Estimate made by ..... Checked by ..... Date .....

(For additional space, use additional sheets of this size.)

JANUARY 3, 1919.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 151.  
SUBSISTENCE.

Appropriation: Regular supplies.      Item name: Hay.

Initial equipment.	Strength.	Working basis.*	Requirements.
	92, 400	366 days, at 14 lbs. per day.	473, 457, 600
Maintenance.....	27, 500	366 days, at 17 lbs. per day.	171, 105, 000
Reserves.....			
Total requirements.....			644, 562, 600

Deductions:		
	Estimated quantity on hand July 1, 1919.....	
Cost Basis:	Estimated salvage and reclamation.....	
1½¢.	Total deductions.....	
	Net requirements.....	644, 562, 600
	Total cost of net requirements.....	\$9, 668, 439. 00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Fixed by Army Regulations at 14 pounds for horses and 17 pounds per day for Field Artillery horses of the heavy draft type.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Price taken from prevailing market, October 1, 1918 (\$30 to \$31 per ton for No. 2 timothy).
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
The General Staff estimates that there will be 44,000 Cavalry horses, 27,500 draft horses, and 48,400 mules on hand for the entire fiscal year 1920.

Estimate made by.....      Checked by.....



DECEMBER 26, 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F. 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 154.

SUBSISTENCE.

*Appropriation:* Regular supplies.      *Item name:* Bedding in kind for animals.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	119,900	366 days, at 100 lbs. per mo.	143,880,000
Reserves .....			
Total requirements .....			143,880,000

## Deductions:

Estimated quantity on hand July 1, 1919 .....		
COST BASIS:	Estimated salvage and reclamation .....	
1c	Total deductions .....	
	Net requirements .....	143,880,000
	Total cost of net requirements .....	\$719,400.00

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Fixed by Army Regulations at 100 pounds per month.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Price taken from prevailing market, Oct. 1, 1918 (\$9.50 to \$11.50 per ton for straw).
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
The General Staff estimates that there will be 71,500 horses and 48,400 mules on hand for the entire fiscal year 1920.

Estimate made by..... Checked by..... Date.....

(For additional space, use additional sheets of this size.)

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 155.

SUBSISTENCE.

*Appropriation:* Regular supplies.*Item name:* Seeds for raising forage.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....
Reserves.....	.....	.....	.....

Total requirements:

Deductions:			
	Estimated quantity on hand July 1, 1919.....	.....	
COST BASIS:	Estimated salvage and reclamation.....	.....	
\$	Total deductions.....	.....	
	Net requirements.....	.....	
	Total cost of net requirements.....		\$40,000.00

\*"Working basis" is the quantity required per man or per unit for stated periods or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Based on cost for nine months of the fiscal year 1918 (\$33,476.43).

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Estimated as required to purchase necessary seeds for raising forage. These seeds are for use in three permanent remount depots, Fort Royal, Fort Reno, and Fort Keogh. The quantity of forage to be raised will equal, if not exceed, the quantity raised during the period of the war, as estimated by Remount Division.

Estimate made by..... Checked by..... Date Nov. 25, 1918.

(For additional space, use additional sheets of this size.)

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 156.

SUBSISTENCE.

Appropriation: Regular supplies.

Item name: Implements for raising forage.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	.....	.....	.....
Reserves .....	.....	.....	.....

Total requirements:

Deductions:		
Cost Basis: \$	Estimated quantity on hand July 1, 1919.....	.....
	Estimated salvage and reclamation .....	.....
	Total deductions.....	.....
	Net requirements.....	.....
Total cost of net requirements. ....		\$35, 000

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on cost for nine months of the fiscal year 1918 (\$26,781.14).
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
Estimates as required to purchase necessary implements for raising forage.  
The amount required for purchase of implements for raising forage will equal, if not exceed, amount required during the war period, as the quantity of forage to be raised in peace times will be larger.

Estimate made by.....

Checked by.....

Date: Nov. 25, 1918.

(For additional space, use additional sheets of this size.)

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.      Item No. 157.

SUBSISTENCE.

Appropriation: Regular supplies.      Item name: Labor required for raising forage.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....			
Reserves .....			

Total requirements:

Deductions:			
Estimated quantity on hand July 1, 1919.....			
COST BASIS:	Estimated salvage and reclamation .....		
\$	Total deductions.....		
	Net requirements.....		
	Total cost of net requirements. ....		
			\$70,000.00

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on cost for nine months of the fiscal year 1918 (\$53,562.28).
- 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919:
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
- 5. REMARKS:  
Estimated as required to hire the necessary labor in connection with raising forage. The labor required for raising forage will equal, if not exceed, that required during the war period, as the quantity of forage to be raised in peace times will be larger.

Estimate made by.....      Checked by.....      Date.....  
(For additional space, use additional sheets of this size.)

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.

Item No. 158.

## SUBSISTENCE.

*Appropriation:* Regular supplies.      *Item name:* Expenses incident to raising forage.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	.....	.....	.....
Reserves .....	.....	.....	.....

Total requirements:

Deductions:			
	Estimated quantity on hand July 1, 1919.....	.....	
COST BASIS:	Estimated salvage and reclamation.....	.....	
\$	Total deductions.....	.....	
	Net requirements.....	.....	
	Total cost of net requirements.....		\$25,000

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Based on cost for nine months of the fiscal year 1918, \$20,085.75.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919.

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Estimated as required to cover expenses incident to raising forage, such as  
baling hay, sacking oats, etc.

Estimate made by..... Checked by..... Date Nov. 25, 1918.

(For additional space, use additional sheets of this size.)

DECEMBER 26, 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DIVISION.   Item No. 159.

SUBSISTENCE.

Appropriation: Regular supplies.   Item name: Straw for soldiers' bedding.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	30 pounds per man for 3 months.	45, 000, 000
Reserves.....			
Total requirements.....			45, 000, 000

Deductions:		
	Estimated quantity on hand July 1, 1919.....	
COST BASIS:	Estimated salvage and reclamation.....	
\$0. 006	Total deductions.....	
	Net requirements.....	45, 000, 000
		(\$270, 000. 00)
	Total cost of net requirements.....	\$100, 000, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on Army Regulations, 30 pounds per man per month.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Price taken from prevailing market Oct. 1, 1918 (\$11 to \$11.50 per ton). The quantity of 45,000,000 pounds at \$0.006 would amount to \$270,000, but it is not believed that this amount will be needed, and therefore a flat estimate of \$100,000 is submitted.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:
5. REMARKS:  
In peace times it is estimated that troops will be in the field for 3 months in the year at which time straw for their bedding will be required. The other 9 months of the year it is estimated they will be in garrison where they will not need the straw for bedding.

Estimate made by.....   Checked by.....   Date.....  
(For additional space; use additional sheets of this size.)

# ARMY APPROPRIATION BILL

1920



## TRANSPORTATION OF THE ARMY

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Printed for the use of the Committee on Military Affairs of the House

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PART 3

WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1919





## ARMY TRANSPORTATION.

Item.	Amount.	Division making estimate.
202. Transportation of the Army.....		C. D.
202a. Troops changing station.....	\$5,500,000.00	C. D.
202b. Impedimenta and organization property accompanying troops changing station.....	1,150,000.00	C. D.
202c. Public animals with troops changing station.....	700,000.00	C. D.
202d. Horses of officers changing station.....	225,450.00	C. D.
202e. Street-car tickets, procurement of.....	85,000.00	C. D.
202f. Purchase of railroad equipment.....		D.
202g. Operation, maintenance, and repair of railroad equipment.....	100,000.00	D.
202h. Reimbursement of travel expenses of newly appointed cadets to the United States Military Academy.....	10,000.00	C. D.
203. And its supplies.....		C. D.
203a. Transportation of signal stores.....	725,000.00	C. D.
203b. Transportation of engineering stores.....	278,600.00	C. D.
203c. Transportation of medical stores.....	257,250.00	C. D.
203d. Transportation of submarine-mine material.....		C. D.
204. Transportation of baggage.....		C. D.
204a. Of officers.....	787,168.56	C. D.
204b. Of enlisted men.....	105,187.84	C. D.
204c. Of civilian employees, The Adjutant General's Department.....	5,800.80	C. D.
204d. Of civilian employees, Inspector General's Department.....	1,933.60	C. D.
204e. Of civilian employees, Judge Advocate General's Department.....	1,933.60	C. D.
204f. Of civilian employees, Quartermaster Corps.....	48,340.00	C. D.
204g. Of civilian employees, Medical Department.....	8,701.20	C. D.
204h. Of civilian employees, Corps of Engineers.....	2,900.40	C. D.
204i. Of civilian employees, Ordnance Department.....	1,933.60	C. D.
204j. Of civilian employees, Signal Corps.....	2,900.40	C. D.
Packing and crating:		
205a. Of supplies.....	750,000.00	C. D.
205b. Of baggage.....		C. D.
206. Transportation of recruits.....	7,944,000.00	C. D.
206a. By railroad or steamer.....		C. D.
206b. Street-car tickets.....		C. D.
207. Transportation of recruiting parties.....	130,000.00	C. D.
207a. By railroad or steamer.....		C. D.
207b. Street-car tickets.....		C. D.
208. Transportation of applicants for enlistment.....	2,102,100.00	C. D.
208a. By railroad or steamer.....		C. D.
208b. Street-car tickets.....		C. D.
Travel allowance on discharge:		
209. Enlisted men, 3½ cents per mile.....	500,000.00	C. D.
209b. Officers, 4 cents per mile.....		C. D.
210. Transportation of persons on discharge from United States Disciplinary Barracks, etc.....	159,950.00	C. D.
211. Transportation of supplies furnished to militia.....		C. D.
211a. Clothing.....		C. D.
211b. Camp and garrison equipage.....		C. D.
211c. Other quartermaster stores.....		C. D.
211d. Subsistence stores.....		C. D.
211e. Medical supplies.....		C. D.
211f. Engineers' supplies.....		C. D.
211g. Ordnance, ordnance stores, and small arms.....		C. D.
211h. Signal stores.....		C. D.
212. Transportation of the necessary agents and other employees.....		C. D.
212a. Of The Adjutant General's Department.....	17,750.00	C. D.
212b. Of the Inspector General's Department.....	7,100.00	C. D.
212c. Of the Judge Advocate General's Department.....	3,700.00	C. D.
212d. Of the Quartermaster Corps.....	360,200.00	C. D.
212e. Of the Medical Department.....	58,000.00	C. D.
212f. Of the Corps of Engineers.....	5,800.00	C. D.
212g. Of the Ordnance Department.....	11,550.00	C. D.
212h. Of the Signal Corps.....	35,900.00	C. D.
213. Reimbursement of travel expenses, civilian employees.....	175,000.00	C. D.
214. Transportation of clothing and equipage.....	963,750.00	C. D.
215. Transportation of other quartermaster stores.....		C. D.
215a. Transportation of subsistence stores.....	1,900,000.00	C. D.
215b. Transportation of Cavalry, Artillery, Engineer, Signal Corps, etc., horses from place of purchase.....	140,000.00	C. D.
215c. Transportation of draft and pack animals.....	40,000.00	C. D.
215d. Transportation of miscellaneous quartermaster stores.....	11,250,000.00	C. D.
216. Transportation of horse equipment.....	53,750.00	C. D.
217. Transportation of ordnance and ordnance stores and small arms.....	1,000,000.00	C. D.
218. Wharfage.....	272,000.00	W. T.
219. Tolls and ferriages.....	31,500.00	C. D.
220. Transportation of funds.....	21,350.00	C. D.

*Army transportation—Continued.*

Item.	Amount.	Division making estimate.
<b>Draft animals:</b>		
221a. Purchase of.....	<sup>1</sup> \$924,000.00	Rem.
221b. Hire of.....		Rem.
221c. Supplies for care of.....	<sup>1</sup> 50,000.00	C. & E.
<b>Pack animals:</b>		
222a. Purchase of.....	<sup>1</sup> 83,600.00	Rem.
222b. Hire of.....		Rem.
222c. Hire of riding horses.....		Rem.
222d. Prisoners of war.....		Rem.
<b>Harness:</b>		
Purchase of—		
223a. Harness.....	<sup>1</sup> 350,068.00	C. & E.
223b. Harness parts.....	<sup>1</sup> 402,660.28	C. & E.
223c. Pack rigging.....	<sup>1</sup> 39,098.00	C. & E.
223d. Pack rigging parts.....	<sup>1</sup> 92,248.70	C. & E.
Repair of—		
224a. Harness.....		C. & E.
224b. Tools for repair of, and pack rigging.....		C. & E.
224c. Material for repair of, and pack rigging.....		Rem.
224d. Reclamation of harness.....		Rem.
<b>Vehicles:</b>		
<b>Wagons—</b>		
225a. Purchase of complete.....	<sup>1</sup> 417,531.79	M. V.
225b. Parts of.....	<sup>1</sup> 724,500.00	M. V.
226a. Repair of.....		M. V.
226b. Repair tools.....		M. V.
226c. Repair material.....		M. V.
<b>Carts—</b>		
227a. Purchase of, complete.....	<sup>1</sup> 115,551.16	M. V.
227b. Repair of.....	<sup>1</sup> 250,765.05	M. V.
<b>Drays—</b>		
228a. Purchase of, complete.....		M. V.
228b. Repair of.....		M. V.
<b>Miscellaneous horse-drawn—</b>		
229a. Purchase of, complete.....		M. V.
229b. Repair of.....		M. V.
<b>Automobiles—</b>		
229c. Purchase of.....		M. T.
229d. Hire of.....	10,000.00	M. T.
229e. Repair of, including spare parts.....	<sup>1</sup> 8,437.50	Salvage.
229e. Repair of, including spare parts.....	579,528.00	M. T.
<b>Motor trucks—</b>		
229g. Purchase of.....		M. T.
229h. Hire of.....	10,000.00	M. T.
229i. Repair of Paulins.....		M. T.
229i. Repair of, including spare parts.....	<sup>1</sup> 15,120.00	Salvage.
229i. Repair of, including spare parts.....	15,751,846.00	M. T.
<b>Motorcycles—</b>		
229k. Purchase of.....		
229l. Hire of.....		
229m. Repair of, including spare parts.....	<sup>1</sup> 3,510.00	Salvage.
229m. Repair of, including spare parts.....	746,398.00	M. T.
<b>Bicycles—</b>		
229o. Purchase of.....		M. T.
229p. Repair of.....	43,439.20	M. T.
<b>Drayage, cartage, hauling:</b>		
230a. At posts.....	21,000.00	C. D.
230b. At depots.....	5,000.00	C. D.
230c. At arsenals and armories.....	12,000.00	C. D.
230d. In the field.....	5,000.00	C. D.
232a. Hire of dock labor.....		C. D.
233. Ships, purchase of.....	33,262,500.00	W. T.
234. Sailing public transports.....		W. T.

<sup>1</sup> The following items are not included in the totals:

221a. Purchase of draft animals.....	\$924,000.00
221c. Supplies for care of pack animals.....	50,000.00
222a. Purchase of pack animals.....	83,600.00
223a. Purchase of harness.....	350,068.00
223b. Purchase of harness parts.....	402,660.28
223c. Purchase of pack rigging.....	39,098.00
223d. Purchase of pack rigging parts.....	92,248.70
225a. Purchase of wagons.....	417,531.79
225b. Parts of wagons.....	724,500.00
227a. Purchase of carts.....	115,551.16
227b. Repair of carts.....	250,765.05
229e. Repair of, including spare parts (autos).....	8,437.50
229i. Repair of, including spare parts (trucks).....	15,120.00
229m. Repair of, including spare parts (motorcycles).....	3,510.00

Total..... 3,477,090.48

Already reduced by employees—\$10,837,996.83—transferred to I. E.

Already reduced by fuel, gasoline, and lubricants—\$16,884,854.45—transferred to R. S.

*Army transportation—Continued.*

Item.	Amount.	Division making estimate.
Transports:		
234b. Deck supplies.....	\$402,000.00	W. T.
234c. Engine supplies.....		
234d. Stewards' supplies.....		
234f. Water.....		
234g. Laundry.....	12,000.00	W. T.
234h. Pilotage.....	29,750.00	W. T.
234i. Stevedoring and longshore work.....	21,750.00	W. T.
234j. Removing ashes.....	195,000.00	W. T.
234k. Painting and cleaning.....	2,150.00	W. T.
234l. Miscellaneous shore expense.....	30,000.00	W. T.
234m. Towage.....	80,000.00	W. T.
234n. Repairs.....	4,500.00	W. T.
235. Boats harbor.....	687,000.00	W. T.
235a. Purchase.....	5,461,000.00	W. T.
235b. Repairs.....	285,000.00	W. T.
235d. Supplies.....	112,000.00	W. T.
235f. Water.....	4,250.00	W. T.
235g. Charter or hire of.....	85,000.00	W. T.
235h. Miscellaneous.....	114,250.00	W. T.
236. Other vessels, artillery boats.....		W. T.
236a. Purchase.....	593,000.00	W. T.
236b. Repairs.....	215,000.00	W. T.
236d. Supplies.....	170,000.00	W. T.
236f. Water.....	5,100.00	W. T.
236g. Charter or hire of.....	165,000.00	W. T.
236h. Miscellaneous expenses.....	25,000.00	W. T.
X234. Charter of vessels.....		W. T.
X234a. Charter.....	106,344,600.00	W. T.
X234b. Maintenance and operation.....	156,850,160.00	W. T.
X234c. Reimbursement for losses of chartered transports.....	31,178,625.00	W. T.
X234d. Shore establishments.....	27,750,000.00	W. T.
Total.....	419,200,346.20	

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE, FISCAL YEAR 1920.

Item No. 202-a.

*Item name:* Transportation of the Army; transportation of the troops.*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$5,500,000.

Total required: \$5,500,000.

Cost based on average annual expenditure.

**Explanation:**

The estimate under this item is for the cost of passenger transportation (including sleeping-car accommodations) for the Army, exclusive of civilian employees, which are estimated for under separate items of this estimate.

The average annual expenditure under this item during times of peace is \$10.26, which, plus 30 per cent to cover increase in passenger rates, would require for an army of 500,000 men approximately \$6,669,000. However, it is not believed that during the fiscal year 1920 organizations will change stations to the same extent as during the period preceding the fiscal year 1917, and the amount as called for above is considered ample.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE, FISCAL YEAR 1920.

Item No. 202-b.

*Item name:* Transportation of the Army; impedimenta and organization property accompanying troops changing stations.*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$1,150,000.

Cost based on prewar per capita cost.

**Explanation:**

The estimate under this item is for cost of transportation of impedimenta and organization property accompanying troops changing station. Under this head is included tentage, bedding, hardware, rope, lockers, mess chests, kitchen ware, clothing, horse equipment, office records, small-arms ammunition, wagons and spare parts, harness saddlery, tools, forage for use in transit and upon arrival destination.

The average annual expenditure under this item during times of peace is approximately \$2.1542 per capita, which, plus 25 per cent to cover increase in freight rates, would indicate a probable expenditure of \$1,346,375, but it is not believed that organizations will be ordered to change stations to the same extent as during the period preceding the fiscal year 1917, and the amount as called for is believed sufficient.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

GENERAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 202-c.

*Item name:* Transportation of the Army: Public animals with troops changing station.*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$700,000.

Cost based on prewar per capita cost.

**Explanation:**

This item covers cost of transportation of all public animals accompanying troops changing station. The cost of transportation of these animals from place of purchase is paid from items 215-b, and 215-c.

The per capita expenditure under this item during the fiscal year 1916 was \$1.3094 which, plus 25 per cent to cover increase in freight rates, would indicate a probable expenditure of \$818,900 but it is not thought that organizations will be ordered to change station to the same extent as during the period preceding the fiscal year 1917, and the amount as called for above is believed sufficient.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 202-d.

*Item name:* Transportation of the Army: Horses of officers changing station.*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$225,450.

Cost based on prewar per capita cost.

**Explanation:**

This item covers cost of transportation of the horses of mounted officers on authorized changes of station of such officers.

The per capita cost under this item for the fiscal year 1916 was \$0.3975 which, plus 25 per cent to cover increase in freight rates, would indicate a probable expenditure of \$248,450, but it is not believed that organizations will change station to the same extent as during the period preceding the fiscal year 1917, and the amount as called for above is considered adequate.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 202-e.

*Item name:* Transportation of the Army: Procurement of street-car tickets.*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost, \$85,000.

Cost based on prewar per capita cost.

**Explanation:**

Under the provisions of paragraph 1127, Army Regulations 1913, street-car tickets are furnished for the transportation of officers, enlisted men, and civilian employees in the transaction of public business when this form of transportation is preferable in convenience and cost to the supply of other transportation. They are not furnished to an officer traveling under mileage orders or to officers or others for travel between their homes and offices.

From this item is also paid the cost of street-car transportation of funeral escorts, when the distance is considered too great for marching, and also of movements of troops between railroad depots and posts under similar conditions.

The per capita cost under this item for the fiscal year 1916 was \$0.1412 which, plus 25 per cent to cover increase in street railway rates, would indicate a probable expenditure of \$88,250, but it is believed that the amount called for above will prove sufficient.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 202-f.

*Item name:* Transportation of the Army: Purchase of railroad equipment.*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: None.

**Explanation:**

In view of the large amount of railroad equipment now on hand, no further purchases are considered necessary.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 202-g.

*Item name:* Transportation of the Army: Operation, maintenance, and repair of railroad equipment.

*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$100,000.

**Explanation:**

The amount estimated for is required for repairs to the equipment at Forts Leavenworth, Levett, Hancock, Du Pont, Monroe, Morgan, Governors Island, Hoboken Shore Railroad, various camps, in the Philippine Islands, etc.

It is believed that much of the material procured for the war emergency now owned will not be required to maintain, and the amount as above called for should prove ample for maintenance and repair of all equipment necessary.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 202-h.

*Item name:* Transportation of the Army: Reimbursement of travel expenses of newly appointed cadets to the United States Military Academy.

*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$10,000.

Cost based on prewar cost.

**Explanation:**

The estimate under this item is for reimbursement of cadets for traveling expenses from their homes to the United States Military Academy, West Point, N. Y., and includes railroad fares, sleeping-car accommodations, meals en route, and transfer of baggage.

The cost under this item for the fiscal year 1916 was \$6,224.16. The amount shown above will be required on account of the increase in number of cadets at West Point.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 203-a.

*Item name:* And its supplies: Transportation of the signal stores, aeroplanes, and aviation supplies.

*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$725,000.

Cost based on prewar per capita expenditure.

**Explanation:**

From this item is paid the cost of all Signal Corps stores and supplies including aeroplanes and other supplies for the aviation section.

*Signal stores.*—The per capita expenditure under this item for the fiscal year 1916 was 53.74 cents, to which should be added 25 per cent to cover increase in railroad rates, making a per capita of 67.17 cents in using this per capita cost as a basis for estimating for the fiscal year 1920. Based on 500,000 this would indicate a requirement of \$335,850. However, this amount provides for the transportation of aeroplanes and other aviation supplies, and same is reduced to \$225,000 to cover signal stores, as it is desired to treat aeroplanes and aviation stores as a separate project under this subitem.

*Aeroplanes and aviation supplies.*—In view of the uncertainty as to the aviation program for the fiscal year 1920, a definite working basis under this subitem is problematical. However, as aviation to some extent will be in existence during the fiscal year 1920, some provision for the transportation of aeroplanes and aviation supplies is necessary, the freight rates on which are extremely high.

The Department of Military Aeronautics suggested to this office that estimate for this purpose should be made for \$750,000, but it is thought in view of the circumstances cited that \$500,000 will prove sufficient.



FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 203-b.

*Item name:* And its supplies: Transportation of engineering stores.*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$278,600.

Cost based on prewar per capita expenditure.

**Explanation:**

From this item is paid the cost of transportation of engineer material supplies, and stores for use in connection with the Army. It does not include cost of transportation of material and supplies used in connection with river and harbor work and other improvements.

The per capita expenditure under this item for the fiscal year 1916 was 44.58 cents, but in using this figure in estimating for funds under this item 25 per cent must be added thereto to cover the increase in railroad freight rates, bringing same up to 55.72 cents per capita, which, for a strength of 500,000 would necessitate a requirement of \$278,600. The estimates of the Chief of Engineers for this transportation is \$355,000, or \$76,400 more than this estimate as submitted.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 203-c.

*Item name:* And its supplies; transportation of medical stores.*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$257,250.

Cost based on prewar per capita cost.

**Explanation:**

From this item is paid the cost of transportation of medical stores and supplies, except certain express shipments which are paid direct by the Medical Department under authority of a clause carried in the annual Army appropriation acts under "Medical Department," reading: "For payment of express companies and local transfers employed directly in the Medical Department for the transportation of medical and hospital supplies, including bidder's samples and water for analysis."

The per capita cost under this item for the fiscal year 1916 was 41.16 cents, but in using this figure in estimating for funds under this item 25 per cent must be added thereto to cover the increase in railroad freight rates, bringing per capita cost to 51.45 cents per capita, which, for a strength of 500,000, would necessitate a requirement of \$257,250, the amount of this estimate.

FORM F. 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 204-a.

*Item name:* Transportation of baggage of officers.*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$787,168.56.

Cost based on prewar cost.

**Explanation:**

From this item is paid the cost of transportation of baggage and household effects of officers changing station under orders, the amount transported for each grade varying, as shown under item 204 (consolidated).

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 204-b.

*Item name:* Transportation of baggage of enlisted men.*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$105,187.84.

**Explanation:**

From this item is paid the cost of transportation of baggage and household effects of noncommissioned officers changing station, and also the transportation charges on personal effects shipped for other enlisted men, the weight of shipments being limited to 150 pounds per capita for enlisted men below grade 17.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 204-c.

*Item name:* Transportation of baggage of civilian employees, Adjutant General's Department.

*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$5,800.80.

Cost based on prewar cost.

**Explanation:**

The civilian employees for whom baggage is transported under this item are clerks in the classified civil service.

FORM F2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 204-d.

*Item name:* Transportation of baggage of civilian employees, Inspector General's Department.

*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$1,933.60.

Cost based on prewar cost.

**Explanation:**

Civilian employees for whom baggage and household effects are transported under this item are clerks under classified civil service.

FORM F2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 204-e.***Item name:* Transportation of baggage of civilian employees, Judge Advocate General's Department.*Appropriation:* Supplies, Services, and Transportation.**Total estimated cost: \$1,933.60.****Cost based on prewar cost.****Explanation:**

Civilian employees for whom baggage and household goods are transported under this item are clerks under classified civil service.

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**FORM F 2.****ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item 204-f,***Item name:* Transportation of baggage of civilian employees, Quartermaster Corps.*Appropriation:* Supplies, Services, and Transportation.**Total estimated cost: \$48,340.****Cost based on prewar cost.****Explanation:**

The civilian employees and agents for whom transportation of baggage and household effects are provided under this item are clerks, inspectors of clothing, supplies, etc.; civil engineers, superintendents of construction, electrical and mechanical engineers, mechanics, and packers of the Quartermaster Corps.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 204-g.

*Item name:* Transportation of baggage of civilian employees, Medical Department.*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$8,701.20.

Cost based on prewar cost.

**Explanation:**

Civilian employees under this item are clerks, classified service, and Army nurses.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 204-h.

*Item name:* Transportation of baggage of civilian employees, Corps of Engineers.*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$2,900.40.

Cost based on prewar cost.

**Explanation:**

Civilian employees for whom transportation of baggage and household goods is provided under this item are clerks, surveyors, draftsmen, photographers, and master laborers of the Engineer Corps on duty with the Army.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 204-i.

*Item name:* Transportation of baggage of civilian employees, Ordnance Department*Appropriation:* Supplies, Services, and Transportation.

Total estimated cost: \$1,933.60.

Cost based on prewar cost.

**Explanation:**

Civilian employees for whom transportation of baggage is provided under this item are clerks, foremen, and machinists of the Ordnance Department.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 204-j.

*Item name:* Transportation of baggage of civilian employees, Signal Corps.*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$2,900.40.

Cost based on prewar cost.

**Explanation:**

The civilian employees for whom transportation of baggage is provided under this item are clerks, electrical engineers, electricians, mechanics, and laborers of the Signal Corps.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 205.

*Item name:* Including the cost of packing and crating.*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$750,000.

Cost based on prewar per capita cost.

**Explanation:**

This item covers cost of packing and crating supplies and baggage. The allowance for packing and crating baggage is \$1.30 per hundred pounds on authorized weight of each grade as shown under item 204.

The per capita cost under this item on basis of 60 cents per hundred pounds, the money allowance for this class of service prior to change in paragraph 1136, Army Regulations, dated July 31, 1918, increasing same 116 $\frac{2}{3}$  per cent, making present allowance \$1.30 per hundred pounds, is 75 cents. Using the above figures as a basis the amount required would be \$812,500, but it is believed the amount called for will be sufficient.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 206.

*Item name:* Transportation of recruits.*Appropriation:* Supplies, Service, and Transportation

Total estimated cost: \$7,944,000.

Cost based on prewar per capita cost.

**Explanation:**

Applicants for enlistment accepted at recruiting stations are sent to recruit depots and depot posts for final physical examination and enlistment if found qualified.

The average cost of transportation of recruits was \$19.60. From present information there will only be 30,000 men remaining of the Regular Army, but assuming that of the present Army reenlistments in the Regular Establishment will occur to bring same up to a strength of 200,000, there will still remain 300,000 men to be recruited. Using the average per capita cost of \$19.60 plus 30 per cent to cover increase in rates, or \$26.48, the amount required for this purpose will be \$7,944,000, as shown above.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 207.

*Item name:* Transportation of recruiting parties.*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$130,000.

Cost based on prewar per capita cost.

**Explanation:**

This item is for the cost of transportation of recruiting parties that are sent from general recruiting stations to substations and other points for the purpose of securing recruits.

Estimate is based on the average per capita expenditure of 20 cents plus 30 per cent to cover increase in passenger rates, or 25 cents.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 208.

*Item name:* Transportation of applicants for enlistment.*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$2,102,100.

Cost based on prewar per capita cost.

**Explanation:**

This estimate is for the travel expenses of applicants between recruiting stations and recruit depots and depot posts, and of rejected applicants from recruit depots and depot posts to place of enlistment. Past experiences show that about 9 per cent of the applicants are rejected at recruit depots and depot posts, and in order to obtain 300,000 suitable recruits, estimate is based on the transportation of 330,000 applicants for enlistment at an average cost of \$6.37 per capita.



FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 209.

*Item name:* Travel allowances to enlisted men of discharge.*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$500,000.

**Explanation:**

The expenditure under this item during the fiscal year 1917 for an average strength of 167,734 men was \$1,224,720.96; however, in view of the fact that the Army of 500,000 during the fiscal year 1920 will be composed largely of new enlistments, but few discharges will occur. The \$500,000 estimated for is based on \$1 per man.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 210.

*Item name:* Transportation of persons on their discharge from the United States Disciplinary Barracks or from any place in which they have been held under a sentence of dishonorable discharge and confinement for more than six months or from Government Hospital for the Insane after transfer thereto from such barracks or place to their homes (or elsewhere as they may elect). Provided the cost in each case shall not be greater than to the place of last enlistment.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$159,950.00.

Cost based on average per capita cost.

**Explanation:**

From data compiled in this office it developed that the average distance a person travels on his discharge is 1,022 miles, at a cost of \$31.99. Advice received from the office of The Adjutant General of the Army is that the contemplated discharges under this item will be approximately 5,000 which at \$31.99 gives the amount called for.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 211.**

*Item name:* Transportation of supplies furnished to the Militia for the permanent equipment thereof.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: None.

**Explanation:**

From this item has heretofore been paid the cost of transportation of supplies furnished for the permanent equipment of the Militia.

No estimate is made for this purpose for the fiscal year 1920, as such expenditures will hereafter be paid from funds as provided under the militia appropriations and that estimate will be submitted by the Militia Bureau.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 212-a.**

*Item name:* Transportation of the necessary agents and other employees of The Adjutant General's Department.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$17,750.

Cost based on prewar cost.

**Explanation:**

The civilian employees for whom transportation is provided under this item are clerks, classified civil service.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 212-b.**

*Item name:* Transportation of the necessary agents and other employees of the Inspector General's Department.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$7,100.

Cost based on prewar cost.

**Explanation:**

The civilian employees for whom transportation is provided under this item are clerks, classified civil service.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.****ANNUAL ESTIMATE, FISCAL YEAR 1920.****Item No. 212-c.**

*Item name:* Transportation of the necessary agents and other employees of the Judge Advocate General's Department.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$3,700.

Cost based on prewar cost.

**Explanation:**

The civilian employees for whom transportation is provided under this item are clerks, classified civil service.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

. BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE, FISCAL YEAR 1920.

Item No. 212-d.

*Item name:* Transportation of the necessary agents and other employees of the Quartermaster Corps.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$360,200.

Cost based on prewar cost.

**Explanation:**

The civilian employees for whom transportation is provided under this item are clerks, inspectors of clothing, supplies, etc., civil engineers, superintendents of construction, electrical and mechanical engineers, mechanics, packers, and veterinarians of the Quartermaster Corps.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 212-e.

*Item name:* Transportation of the necessary agents and other employees of the Medical Department.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$58,000.

Cost based on prewar cost.

**Explanation:**

The civilian employees for whom transportation is provided under this item are clerks, classified civil service, and Army nurses.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 212-f.

*Item name:* Transportation of the necessary agents and other employees of the Corps of Engineers.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$5,800.

Cost based on prewar cost.

**Explanation:**

The civilian employees for whom transportation is provided under this item are clerks, surveyors, draftsmen, photographers, and master laborers of the Engineer Corps, when traveling on duty for the Army.

The cost of transportation for employees of the Corps of Engineers engaged in river and harbor work or other public improvements is paid from the appropriations made for such projects.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 212-g.

*Item name:* Transportation of the necessary agents and other employees of the Ordnance Department.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$11,550.

Cost based on prewar cost.

**Explanation:**

The civilian employees for whom transportation is provided under this item are clerks, foremen, and machinists of the Ordnance Department.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 212-h.

*Item name:* Transportation of the necessary agents and other employees of the Signal Corps.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$35,900.

Cost based on prewar cost.

**Explanation:**

The civilian employees for whom transportation is provided under this item are clerks, electrical engineers, electricians, mechanics, and laborers of the Signal Corps.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 213.

*Item name:* Reimbursement of travel expenses, civil employees; per diem allowances in lieu of subsistence not exceeding \$4 for those authorized to receive per diem allowance.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$175,000.

Cost based on prewar per capita cost.

**Explanation:**

From this item is paid reimbursement of actual expenses incurred for meals, lodging, bath, and laundry not exceeding \$5 per day, while in transit or at temporary stations for less than 30 days, or a flat per diem allowance of \$4 in lieu of subsistence. Reimbursement is limited to \$1.50 per day after the first 30 days at any one place.

The laws governing the payment of expenses incurred for subsistence while traveling on duty are as follows:

On and after July first, nineteen hundred and fourteen, unless otherwise expressly provided by law, no officer or employee of the United States shall be allowed or paid any sum in excess of expenses actually incurred for subsistence while traveling on duty outside of the District of Columbia and away from his designated post of duty, nor any sum for such expenses actually incurred in excess of \$5 per day; nor shall any allowance of reimbursement for subsistence be paid to any officer or employee in any branch of the public service of the United States in the District of Columbia unless absent from his designated post of duty outside of the District of Columbia, and then only for the period of time actually engaged in the discharge of official duties. (Act of Apr. 6, 1914, 38 Stat., 318.)

That the heads of executive departments and other Government establishments are authorized to prescribe per diem rates of allowance, not exceeding \$4 in lieu of subsistence, to persons engaged in field work or traveling on official business outside of the District of Columbia and away from their designated posts of duty when not otherwise fixed by law. For the fiscal year nineteen hundred and sixteen and annually thereafter estimates of appropriations from which per diem allowances are to be paid shall specifically state the rates of such allowances. (Act of Aug. 1, 1914, 38 Stat., 680.)

Under Army Regulations, paragraph 733, reimbursement of the following expenses are allowed when traveling under orders:

(a) Cost of transportation over the shortest usually traveled route, when it was impracticable to furnish transportation in kind on transportation requests.

(b) Cost of transfers to and from railroad stations, not to exceed 50 cents for each transfer.

(c) Cost of one lower berth in a sleeping car, seat in a parlor car, or customary stateroom accommodations on boats and steamers, when extra charge is made therefor.

(d) Fees to expressmen and porters on arrival at and departure from hotels and stations, not to exceed 10 cents in each case when the service is rendered in connection with the transportation of baggage; fees for checking baggage at stations and hotels, not to exceed

10 cents for each piece checked; and fees to sleeping car and parlor car porters not to exceed 25 cents per day, or 10 cents when the car is used in daytime only.

(e) Cost of meals, including tips, not to exceed \$5 a day while en route, when meals are not included in the transportation fare paid, and not to exceed \$5 a day for meals, tips, and lodgings during necessary delay en route, and when meals are included in the transportation fare paid, tips for meals not to exceed 15 cents each.

(f) Cost of meals and lodgings, including baths, tips, and laundry work, not to exceed \$5 a day for the first 30 days while on duty at places designated in the orders for the performance of temporary duty, and a flat per diem allowance of \$1.50 a day after the first 30 days of temporary duty at any one place. In time of actual war no such reimbursement of expenses or per diem allowance will be allowed to the civilian employees specified who accompany troops in the field, but in lieu thereof the allowance of tents prescribed by the War Department and a ration will be furnished such employees.

In lieu of reimbursement for the actual expenses provided in (e) and (f) of subparagraph 1, civilian employees, not accompanying troops in time of actual war, nor traveling on Army transports, may, when their orders so prescribe, be allowed flat per diem allowances not exceeding the following rates when traveling and when on duty for the first 30 days at places designated in their orders for the performance of temporary duty: \$4, when in such status more than 18 hours in the day; \$3, when in such status more than 12 hours and not exceeding 18 hours in the day; \$2, when in such status more than 6 hours and not exceeding 12 hours in the day; \$1, when in such status not exceeding 6 hours in the day.

The annual average expenditure under this item has, during prewar time, been 46.5 cents per capita, which would indicate a requirement of \$232,500 for the fiscal year 1920, but as the travel of civilian employees will probably not increase in the same ratio as the increase in the Army, it is thought the amount shown will prove sufficient.



FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 214.

*Item name:* Transportation of clothing and equipage from Army depots or places of purchase or delivery to the several posts and Army depots and from these depots to the troops in the field.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$963,750.

Cost based on prewar per capita cost.

**Explanation:**

From this item is paid the cost of transportation of clothing and also of camp and garrison equipage, such as barrack bags, barrack chairs, iron bedsteads, blankets, cots, flags, lockers, poles, tents, etc.

The average annual expenditure under this item has, during prewar times, been \$1.861 per capita, but since that time freight rates have increased approximately 25 per cent, which would bring the aforementioned per capita cost up to \$2.605. Using \$2.3262 as a per capita basis, would indicate an expenditure of \$1,163,100, but this has been reduced to \$963,750.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 215a.

*Item name:* Transportation of other quartermaster's stores: Transportation of subsistence stores.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost, \$1,900,000.

Cost based on prewar per capita cost.

**Explanation:**

From this subitem is paid the cost of transportation of all subsistence stores and supplies for the Army.

The average annual expenditure under this subitem is \$3.058 per capita, but in estimating for the fiscal year 1920 this per capita cost must be augmented to the extent of 25 per cent to cover increase in railroad freight rates, bringing same up to \$3.823, which, based on a strength of 500,000, would show a requirement of \$1,911,500, but it is thought the amount called for will prove sufficient.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 215b.

*Item name:* Transportation of other quartermaster's stores: Transportation of Cavalry, Artillery, Engineer, Signal Corps, etc., horses from place of purchase.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$140,000.

Cost based on prewar per capita cost.

**Explanation:**

From this item is paid the cost of transportation of horses for mounted organizations from place of purchase to remount depots or to organizations and from remount depots to organizations, the cost of transportation in connection with changes of station of organizations being paid from item 202c.

The average annual expenditure under this item, during prewar times, is 49.5 cents per capita, based on which, plus 25 per cent to cover increase in railroad rates, would indicate a requirement of  $(500,000 \times \$0.619 = \$309,500)$  \$309,500, but as only 3,000 horses are to be purchased and all animals now on hand are located at the various camps, this amount can be materially reduced. However, as a great many of the camps now in existence will be abandoned, transportation will be required for the animals thereat, and it is thought the amount called for will be ample.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 215c.

*Item name:* Transportation of other quartermaster's stores: Transportation of draft and pack animals from place of purchase.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$40,000.

Cost based on prewar per capita cost.

**Explanation:**

From this item is paid the cost of transportation of draft and pack animals from place of purchase to remount depots or organizations and from remount depots to organizations, the cost of transportation in connection with changes of station or organizations being paid from item 202c.

The average annual per capita expenditure under this item, during prewar times, is 14.6 cents, on which basis, plus 25 per cent to cover increase in railroad freight rates, or 18.5 cents per capita, would indicate a need of \$92,500, but as no purchases for this class of animals are contemplated, a material reduction can be made in this amount. But, as a great many of the camps now in existence will be abandoned, transportation will be required for the animals thereat, and the amount above estimated for is considered sufficient.

Form F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE, FISCAL YEAR 1920.

Item No. 215-d.

*Item name:* Transportation of other quartermaster's stores: Transportation of miscellaneous quartermaster stores.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$11,250,000.

Cost based on prewar cost.

**Explanation:**

This item covers cost of transportation of fuel, forage, and all other quartermaster stores and supplies, other than clothing and equipage, subsistence stores and animals, which are estimated for under other items or subitems of this appropriation.

Included in this item are the following:

Transportation of—	Estimate, 1920.
Gasoline, oils, and greases.....	\$1, 500, 000
Fuel.....	5, 000, 000
Forage and bedding.....	1, 500, 000
Construction material.....	2, 250, 000
Other quartermaster stores.....	1, 000, 000
Total.....	11, 250, 000

*Transportation of gasoline, oils, and greases.*—Based on information received from the Raw Material Division, office director of purchase, 80,000,000 gallons (reduced to 320,000 tons in weight) of gasoline will be required, which, at the average cost of \$9.25 per ton, would necessitate a requirement of \$2,960,000, but in view of the fact that some gasoline will be purchased in local markets, the amount called for should prove sufficient.

*Transportation of fuel.*—Advice from the Raw Materials Division is that 3,201,500 tons, shown as follows, will be required, viz:

Fuel, in kind:	Tons.
Coal.....	2, 000, 000
Coke.....	15, 000
Wood (basis 500,000 cords, at 2 tons).....	1, 000, 000
Fuel for—	
Operation of lighting plants.....	47, 000
Modern batteries.....	45, 000
Laundries.....	35, 000
Pumping plants.....	56, 000
Incinerators.....	3, 500
Total.....	3, 201, 500

3,201,500 tons, at the average cost of \$2.25, would show a requirement of \$7,203,375, but as it is thought some of the fuel will be purchased locally, the amount estimated for is considered adequate.

*Transportation of forage and bedding.*—The Subsistence Division advise that 640,030 tons of forage and bedding will be required dur-

ing the year, which, at the average cost of \$5.25 per ton, would indicate a need of \$3,360,157, but as a great deal of this commodity will be purchased locally, the amount estimated for should prove sufficient.

*Transportation of construction material.*—To provide for a strength of 500,000 men will necessitate the enlargement of some of the present camps, increasing all their present facilities, which work it is supposed will be done with material to be taken from posts or camps which are to be abandoned. This estimate, therefore, does not only cover the transportation of new material, but that which may be salvaged in the reconstruction program. The estimate of the Chief of Construction Division for this transportation is \$2,750,000, or \$500,000 more than this estimate as submitted.

*Other quartermaster stores.*—This estimate is for the transportation of motor vehicles, wagons, parts, harness, pack rigging, and other miscellaneous stores that will be required to be transported during the fiscal year.

The rate per ton used herein is the average cost of transporting these items from the different points of purchase to the various posts and camps.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 216.

*Item name:* Transportation of horse equipment.*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$53,750.

**Explanation:**

From this item is paid the cost of transportation for horse equipment furnished by the Ordnance Department, such as saddles, saddle blankets, bridles, etc. The transportation of harness and pack rigging furnished by the Quartermaster Corps is paid from item 215-d.

The average annual expenditure under this item has, during prewar time, been 10.2 cents per capita, but in using this basis 25 per cent has been added thereto to meet the increase in freight rates. Based on a strength of 500,000 would indicate a requirement of \$63,750, but it is felt that this can be reduced to the amount of \$53,750.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 217.

*Item name:* Transportation of ordnance and ordnance stores and small arms from the foundries and armories to the arsenals, fortifications, frontier posts, and Army depots.*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$1,000,000.

**Explanation:**

From this item is paid the cost of transportation of all ordnance, ordnance stores, and small arms, including guns and gun carriages.

The average annual expenditure under this item has, prior to the present emergency, been \$4.795, and, due to increase in freight rates of 25 per cent, this per capita cost is brought up to \$5.994. Based on a strength of 500,000 this would indicate a probable expenditure of \$2,997,000, but as there is a large stock of this material on hand that will not be required to be transported, it is believed \$1,000,000 will be sufficient. This is the amount the Ordnance Department also estimates will be required under this item.

ESTIMATE, FISCAL YEAR 1920, \$272,000.

Item No. 218.

*Item:* Wharfage--rental of (river and harbor boat service and Coast Artillery boat service).

United States.....	\$270,000
Philippine Islands.....	2,000
Total.....	272,000

**Remarks:**

*United States.*--This item provides for the lease and hire of wharfage facilities for use in connection with the regular river and harbor boat and Coast Artillery boat service, and is based on available costs of the fiscal year 1918, and costs of previous years, allowance being made for additional wharfage which it is estimated will be required on account of increased river and harbor boat service, due to enlarged Army in the United States.

*Philippine Islands.*—The estimate for this item is based on figures submitted by the Philippine Department.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 219.

*Item name:* Tolls and ferriages -payment of.

*Appropriation:* Supplies, Service, and Transportation.

Total estimated cost: \$31,500.

**Explanation:**

From this item is paid the cost of tolls across bridges and turnpikes, where tolls are charged, incurred in the movement of troops on practice marches, maneuvers, etc., and also of ferry charges under similar conditions.

Estimate is based on average annual expenditure of 6.3 cents per capita on the strength of 500,000.

Form F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****BUREAU OF FINANCE.****CENTRAL DISBURSING DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 220.***Item name:* Transportation of funds of the Army.*Appropriation:* Supplies, Service, and Transportation.**Total estimated cost:** \$21,350.**Cost based on** prewar cost.**Explanation:**

From this item is paid the cost of transportation of moneys forwarded for use in payment of troops and other purposes.

Estimate is based on per capita expenditure of \$0.0427 per capita.

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ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE AND TRAFFIC. Item No. 221-a.

REMOUNT DIVISION.

*Item name:* Purchase of draft animals.*Appropriation:* A. T.

Maintenance: 10 per cent of 44,000 draft mules; requirements, 4,400.

Cost Basis: \$210 each.

Total cost of net requirements, \$924,000.

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**5. REMARKS:**

Total of 119,900 animals retained for the needs of the entire Army for the fiscal year 1920. See memorandum from Division of Operations, General Staff, dated December 18, 1918.

Date, January 6, 1919.

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ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE AND TRAFFIC. Item No. 221-b.

REMOUNT DIVISION.

*Item name:* Hire of draft animals.*Appropriation:* A. T.

Total requirements: No estimate.

Date, November 29, 1918.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 221-c.

CLOTHING AND EQUIPAGE DIVISION.

Item name: Supplies incident to care of draft and pack animals.

Appropriation:

Maintenance: For 500,000 men for one year, as per list attached.

COST BASIS: As per list attached.

Total cost of net requirements, \$50,000.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Tables of fundamental allowances reduced to a basic figure per thousand men.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.

	No. as mainte- nance.	Price.	Total.
Bags, nose.....	3,626	\$2.30	\$8,339.80
Covers, feed.....	28	6.00	168.00
Covers, H. & M., blanket lined.....	862	7.58	6,533.96
Covers, rigging.....	28	11.49	321.72
Covers, cargo.....	28	9.86	276.08
Leather, harness, black.....pounds..	33,170	.70	23,219.00
Leather, harness, fair.....do.....	1,800	.90	1,620.00
Leather, latigo.....do.....	1,800	1.00	1,800.00
Total.....			42,278.56
Bags, water, pack mule.....	52	{ No price avail- able; es- timated cost. }	7,721.44
Blanket, saddle.....	618		
Covers, pack.....	28		
Total.....			50,000.00

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

Item No. 222-a.

PURCHASE, STORAGE, AND TRAFFIC CORPS.

REMOUNT DIVISION.

Item name: Purchase of pack animals.

Appropriation: A. T.

Maintenance: 10 per cent of 4,400 pack mules; requirements, 440.

Total requirements ..... 440

Deductions:

COST BASIS:	Net requirements.....	440
\$190.	Total cost of net requirements.....	\$83,600

5. REMARKS:

Total of 119,900 animals retained for the needs of the entire Army for the fiscal year 1920. See memo. from Division of Operations, General Staff, dated Dec. 18, 1918.

Date: Jan. 6, 1919.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

Item No. 222-b.

PURCHASE, STORAGE, AND TRAFFIC CORPS.

REMOUNT DIVISION.

Item name: Hire of pack animals.

Appropriation: A. T.

Total requirements: No estimate.

Date: Nov. 29, 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

Item No. 222-c.

PURCHASE, STORAGE, AND TRAFFIC CORPS.

REMOUNT DIVISION.

Item name: Hire of horses, riding.

Appropriation: A. T.

Total requirements: No estimate.

Date: Nov. 29, 1918.

QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 223-a. Name of item: Purchase of harness.

SUMMARY.

Harness, cart, single set.....	\$38, 740
Harness, lead, cable trace, single set.....	162, 639
Harness, and lead, hame and collar, single set.....	15, 257
Harness, wheel, cable trace, single set.....	130, 527
Harness, wheel, hame and collar, single set.....	2, 905
Total.....	350, 068

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 223-a.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Harness, lead, cable trace, single set.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	6.705 per 1,000 men per year.....	3, 352

Total requirements..... 3, 352

Deduction:

COST BASIS:	Net requirements.....	3, 352
\$48.52.	Total cost of net requirements.....	\$162, 639

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

27.938 cable trace, lead, harness, issued per 1,000 men in field army, based on Tables of Organization, revised to August 1, 1918.  
Estimated life, by harness manufacturers, 50 months, based on previous experience.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Present contract price.
5. REMARKS:

The difference between amounts required of cable trace harness, lead and wheel, is due to the fact that some vehicles require six horses and are equipped with four single sets of lead harness.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 223-a.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Harness, lead, hame and collar, single set.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.837 per 1,000 men per year.....	418

Total requirements..... 418

**Deductions:**

<b>COST BASIS:</b>	Net requirements.....	418
\$36.50.	Total cost of net requirements.....	\$15,257

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

3.486 Hame and collar lead harness issued per 1,000 men in a field army, based on Tables of Organization, revised to August 1, 1918.

Estimated life, by harness manufacturers, 50 months, based on previous experience.

**2. STATE THE SOURCE OF METHOD OF DETERMINING COST BASIS:**

Present contract price.

**5. REMARKS:**

The difference between amounts required of hame and collar harness, and lead and wheel, is due to the fact that ration carts are equipped with one cart harness and one hame and collar, lead harness.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 223-a.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Harness, wheel, cable, trace, single set.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	6.68 per 1,000 men per year.....	3, 340

Total requirements..... 3, 340

**Deductions:**

Cost BASIS: Net requirements..... 3, 340  
 \$39.08. Total cost of net net requirements..... \$130, 527

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

27,837 cable trace, wheel harness issued per 1,000 men in field army, based on Tables of Organization, revised to August 1, 1918.

Estimated life, by harness manufacturers, 50 months, based on previous experience.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Present contract price.

**5. REMARKS:**

The difference between amounts required of cable trace harness, lead and wheel, is due to the fact that some vehicles require six horses and are equipped with four single sets of lead harness.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 223-a.  
CLOTHING AND EQUIPAGE DIVISION.

Item name: Harness, wheel, hame and collar, single set.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	0.14 per 1,000 men per year.....	70

Total requirements..... 70

Deductions:  
Cost Basis: Net requirements..... 70  
\$41.50. Total cost of net requirements..... \$2,905.00

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
0.5824 hame and collar, wheel harness, issued per 1,000 men in field army, based on Tables of Organization, revised to August 1, 1918.  
Estimated life, by harness manufacturers, 50 months, based on previous experience.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 223-b.

CLOTHING AND EQUIPAGE DIVISION.

*Item name:* Purchase of harness parts.*Appropriation:*

Maintenance: For 500,000 men for one year, as per list attached.

Cost Basis: As per list attached.

Total cost of net requirements, \$402,660.28.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated by harness manufacturers as 10 per cent per year of total value of harnesses in use.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Present contract price.

Name.	Number needed in field army.	Value per article.	Total value.	Spare parts esti- mated at 10 per cent.
Harness, lead, cable trace.....	38,566	\$48.52	\$1,871,222.32	\$187,122.23
Harness, wheel, cable trace.....	39,426	39.08	1,501,688.08	150,168.80
Harness, lead, hame and collar.....	4,813	36.50	175,674.50	17,567.45
Harness, wheel, hame and collar.....	804	41.50	33,366.00	3,336.60
Harness, cart.....	8,551	52.00	444,652.00	44,465.20
Total.....				402,660.28

It is estimated that 10 per cent of the total value of the number of harnesses, etc., in use will be required for repairs and spare parts during any one year.

QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 223-c. Name of item: Purchase of pack and rigging.

SUMMARY.

Aparejos.....	\$24, 150. 00
Bridles, riding.....	1, 628. 00
Saddles, riding, full rigged.....	13, 320. 00
Total.....	39, 098. 00

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No.; 223-c.  
CLOTHING AND EQUIPAGE DIVISION.

Item name: Aparejos.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0. 46 per 1,000 men per year.....	230

Total requirements..... 230

Deductions:  
Net requirements..... 230

Total cost of net requirements..... \$24, 150

COST BASIS: \$105.

\*“Working basis” is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS.  
1.915 aparejos issued per 1,000 men in field army, based on Tables of Organization revised to August 1, 1918.  
Estimated life, by harness manufacturers, 50 months, based on previous experience.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.



## ESTIMATE FOR.

**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 223-c.

CLOTHING AND EQUIPAGE DIVISION.

*Item name:* Bridles, riding.*Appropriation:*

Initial equipment.	Strength.	Working basis. *	Requirements.
Maintenance.....	500	0.593 per 1,000 men per year.....	296

## Deductions:

Cost Basis:	Net requirements.....	296
\$5.50.	Total cost of net requirements.....	\$1,628.00

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

2.473 riding bridles issued per 1,000 men in field army, based on Tables of Organization revised to August 1, 1918.  
Estimated life, by harness manufacturers, 50 months, based on previous experience.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Present contract price.

ESTIMATE FOR.  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 223-c.

CLOTHING AND EQUIPAGE DIVISION.

Item name: Saddles, riding, full rigged, each.

Appropriation:

Initial equipment.	Strength.	Working basis. *	Requirements.
Maintenance.....	500	.593 per 1,000 men per year.....	296

Deductions:

Cost Basis:	Net requirements.....	296
\$45.00.	Total cost of net requirements.....	\$13, 320. 00

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
2.473 riding saddles issued per 1,000 men in field army, based on Tables of Organization revised to August 1, 1918.  
Estimated life, by harness manufacturers, 50 months, based on previous experience.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 223-d.

CLOTHING AND EQUIPAGE DIVISION.

*Item name:* Purchase of pack rigging, parts.*Appropriation:*

Maintenance: For 500,000 men for 1 year, as per list attached.

Cost Basis: As per list attached.

Total cost of net requirements, \$92,248.70.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated by harness manufacturers as 10 per cent per year of total value of harness in use.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Present contract price.

Name.	Number needed in field army.	Value per article.	Total value.	Spare parts estimated at 10 per cent.
Aparejos.....	2,520	\$105.00	\$264,600.00	\$26,460.00
Bags, saddle.....	3,414	6.25	21,337.50	2,133.75
Bridles, riding.....	3,414	5.50	18,777.00	1,877.70
Halter and strap.....	109,210	4.25	464,142.50	46,414.25
Saddles, riding.....	3,414	45.00	153,630.00	15,363.00
Total.....				92,248.70

It is estimated that 10 per cent of the total value of the number of harnesses, etc., in use will be required for repairs and spare parts during any one year.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 224-d.

SALVAGE DIVISION.

*Item name:* Harness repair.*Appropriation:*

## 5. REMARKS:

No appropriation required.

Date, 11/27/18. Checked by man. Estimate made by J. W. B.

QUARTERMASTER CORPS, MOTOR AND VEHICLES DIVISION.

Item No. 225a. Item name: Wagons.

Wagon, escort.....	\$87,000.00
Accessories, set for escort wagon.....	28,362.00
Wagons, ambulance.....	5,950.00
Accessories, set for ambulance.....	1,344.02
Wagon, combat, limbered.....	113,000.00
Accessories, set for combat wagon.....	24,346.98
Wagon, mountain, 1917 model.....	2,700.00
Accessories, set for mountain wagon.....	308.79
Wagon, limber caisson.....	151,800.00
Wagon, spring tool.....	2,720.00
Total.....	417,531.79

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 225-a.  
MOTORS AND VEHICLES DIVISION.

Item name: Wagons escort.  
Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.87 per 1,000 men per year.....	435

Total requirements..... 435

Deductions:  
Cost Basis:  
\$200.00.  
Net requirements..... 435  
Total cost of net requirements..... \$87,000.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
7.254 escort wagons issued per 1,000 men in a field army, based on Tables of Organization revised to August 1, 1918.  
Estimated life by wagon manufacturers 100 months, based on previous experience.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 225-a

MOTORS AND VEHICLES DIVISION.

Item name: Accessories, set for escort wagon, as per list attached.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	500	\$0.87 per 1,000 men per year. . . . .	435

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

Total requirements. . . . . 435

Deductions:

COST BASIS: Net requirements. . . . . 435  
\$65.20. Total cost of net requirements. . . . . \$28,362

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Same as for escort wagons.  
One set of accessories furnished with each new escort wagon.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.

Set of accessories for escort wagon.

Article.	Number required.	Unit.	Unit cost.	Total cost.
Ax and handle. . . . .	1	Each. . . . .	\$1.20	\$1.20
Bags, nose. . . . .	4	do. . . . .	2.30	9.20
Blocks, brake. . . . .	2	do. . . . .	.28	.56
Bolts, carriage, 1/2" x 1 1/2". . . . .	2	do. . . . .	.005	.010
Bolts, carriage, 1/2" x 1 1/2". . . . .	2	do. . . . .	.007	.014
Bolt, carriage, 1/2" x 2". . . . .	1	do. . . . .	.007	.007
Bolts, carriage, 1/2" x 2 1/2". . . . .	2	do. . . . .	.008	.016
Bolts, carriage, 1/2" x 3". . . . .	2	do. . . . .	.012	.024
Bolt, carriage, 1/2" x 1 1/2". . . . .	1	do. . . . .	.048	.048
Bolts, carriage, 1/2" x 4". . . . .	4	do. . . . .	.041	.164
Bolt, king. . . . .	1	do. . . . .	.30	.30
Bolt, tire, 1/2" x 2 1/2". . . . .	1	do. . . . .	.005	.005
Bolts, tire, 1/2" x 3". . . . .	5	do. . . . .	.005	.025
Brush, horse. . . . .	1	do. . . . .	2.15	2.15
Bucket, G. I. . . . .	1	do. . . . .	.53	.53
Buckle, harness, B. R., 1/2" ap., 1/2". . . . .	1	do. . . . .	.013	.013
Buckle, harness, B. R., 1/2" ap., 1/2". . . . .	1	do. . . . .	.013	.013
Buckle, harness, B. R., 1/2" ap., 1". . . . .	1	do. . . . .	.016	.016
Buckle, harness, B. R., 1/2" ap., 2". . . . .	1	do. . . . .	.05	.05
Comb, curry. . . . .	1	do. . . . .	.17	.17
Cover, canvas. . . . .	1	do. . . . .	16.75	16.75
Doubletree. . . . .	1	do. . . . .	1.94	1.94
Grease, axle. . . . .	3	Pounds. . . . .	.06	.18
Halters, with chain. . . . .	4	Each. . . . .	4.25	17.00
Lantern, Vesta, complete with globe. . . . .	1	do. . . . .	1.32	1.32
Links, open, 1/2". . . . .	3	do. . . . .	.007	.021
Oil, neat's-foot, 1/2 gallon. . . . .	1	Can. . . . .	.95	.95
Padlock. . . . .	1	Each. . . . .	.30	.30

Set of accessories for escort wagon—Continued.

Article.	Number required.	Unit.	Unit cost.	Total cost.
Pickax and handle.....	1	Each.....	\$0.80	\$0.80
Pole, coupling.....	1	do.....	2.00	2.00
Ring, harness, ap., 1".....	1	do.....	.005	.005
Ring, harness, ap., 1".....	1	do.....	.01	.01
Ring, harness, ap., 1½".....	1	do.....	.015	.015
Ring, harness, ap., 2".....	1	do.....	.025	.025
Rivets, iron, ½" x 1½".....	3	do.....	.001	.003
Rivets, iron, ½" x 2".....	3	do.....	.003	.009
Rope, manila, ½".....	12	Pounds...	.32	3.84
Snap, harness, 1".....	1	Each.....	.03	.03
Snap, harness, 1½".....	1	do.....	.05	.05
Snap, harness, 2".....	1	do.....	.07	.07
Soap, harness.....	1	Cake.....	.40	.40
Spade, short handle.....	1	Each.....	.98	.98
Sponge, coarse.....	1	do.....	.50	.50
Twine, cable laid.....	1	Ball.....	.55	.55
Whip, lash.....	1	Each.....	.48	.48
Whip, stock.....	1	do.....	.50	.50
Wire, stovepipe.....	1	Spool.....	.05	.05
Wrench, monkey, 10".....	1	Each.....	1.82	1.82
Total.....				65.20

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 225-a.

MOTORS AND VEHICLES DIVISION.

Item name: Wagons, ambulance.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	0.035 per 1,000 men per year .....	17

Total requirements..... 17

Deductions:

Cost BASIS: Net requirements..... 17  
\$350.00. Total cost of net requirements..... \$5, 950. 00

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
0.29122 ambulance issued per 1,000 men in a field army, based on Tables of Organization, revised to August 1, 1918.  
Estimated life by wagon manufacturers, 100 months, based on previous experience.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 225-a.

MOTORS AND VEHICLES DIVISION.

Item name: Accessories, set for ambulance, as per list attached.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	0.035 per 1,000 men per year .....	17

Total requirements..... 17

Deductions:

COST BASIS: Net requirements..... 17  
\$79.06. Total cost of net requirements..... \$1.344.02

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Same as wagons, ambulance.  
One set of accessories furnished with each new ambulance.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.

Set of accessories for ambulance.

Article.	Number required.	Unit.	Unit cost.	Total cost.
Bags, nose.....	4	Each.....	\$2.30	\$9.20
Blocks, brake.....	1	do.....	.28	.28
Bolt, carriage, 1" x 1 1/2".....	1	do.....	.005	.005
Bolt, carriage, 1" x 1 1/2".....	1	do.....	.005	.005
Bolt, carriage, 1" x 2".....	1	do.....	.006	.006
Bolt, carriage, 1" x 2 1/2".....	1	do.....	.006	.006
Bolts, carriage, 1 1/2" x 1 1/2".....	2	do.....	.005	.01
Bolt, carriage, 1 1/2" x 2 1/2".....	1	do.....	.006	.006
Bolt, carriage, 1 1/2" x 1 1/2".....	1	do.....	.007	.007
Bolt, carriage, 1 1/2" x 2".....	1	do.....	.007	.007
Bolt, carriage, 1 1/2" x 2 1/2".....	1	do.....	.008	.008
Bolts, carriage, 1 1/2" x 3".....	2	do.....	.008	.016
Bolt, carriage, 1 1/2" x 3 1/2".....	1	do.....	.012	.012
Bolt, carriage, 1 1/2" x 4".....	1	do.....	.013	.013
Bolt, carriage, 1 1/2" x 5 1/2".....	1	do.....	.015	.015
Bolt, carriage, 1 1/2" x 6".....	1	do.....	.016	.016
Bolt, king, 1 1/2" x 2 1/2".....	1	do.....	.10	.10
Bolt, machine, 1 1/2" x 2 1/2".....	1	do.....	.02	.02
Bolt, tire, 1" x 2".....	2	do.....	.005	.01
Bolts, tire, 1" x 2 1/2".....	4	do.....	.005	.02
Bolt, tire, 1 1/2" x 1 1/2".....	1	do.....	.006	.006
Bolt, tire, 1 1/2" x 2".....	1	do.....	.007	.007
Bolt, tire, 1 1/2" x 4 1/2".....	1	do.....	.014	.014
Bolt, tire, 1 1/2" x 5 1/2".....	1	do.....	.017	.017
Bolt, tire, 1 1/2" x 6".....	1	do.....	.017	.017

*Set of accessories for ambulance—Continued.*

Article	Number required.	Unit.	Unit cost.	Total cost
Brush, horse.....	1	Each.....	\$2.15	\$2.15
Bucket, G. I.....	1	do.....	.33	.33
Buckle, harness, B. R. Jap., 1".....	1	do.....	.013	.013
Buckle, harness, B. R. Jap., 1".....	1	do.....	.013	.013
Buckle, harness, B. R. Jap., 1".....	1	do.....	.016	.016
Buckle, harness, B. R. Jap., 1 1/4".....	1	do.....	.03	.03
Cash, small.....	1	do.....	.17	.17
.....	4	do.....	7.50	30.00
.....	1	do.....	.35	.35
.....	1	do.....	.18	.18
.....	3	Pound.....	.08	.24
.....	4	Each.....	4.25	17.00
.....	1	do.....	.65	.65
.....	2	do.....	1.07	2.14
.....	3	do.....	.007	.021
.....	1	do.....	.12	.12
.....	1	do.....	.12	.12
.....	1	Can.....	.95	.95
.....	1	Each.....	.005	.005
.....	1	do.....	.01	.01
.....	1	do.....	.015	.015
.....	1	do.....	.025	.025
.....	2	do.....	.002	.004
.....	2	do.....	.004	.012
.....	2	do.....	.001	.002
.....	3	do.....	.002	.006
Snap, harness, 1".....	1	do.....	.01	.01
Snap, harness, 1 1/4".....	1	do.....	.05	.05
Snap, harness, 1 1/2".....	1	do.....	.06	.06
Soap, harness.....	1	Case.....	.40	.40
Sponge, coarse.....	1	Each.....	.50	.50
Tongue.....	1	do.....	7.50	7.50
Whip, lash.....	1	do.....	.46	.46
Whip, stock.....	1	do.....	.50	.50
Wire, cutter.....	1	do.....	2.63	2.63
Wire, stovepipe.....	1	Spool.....	.05	.05
Wrench, monkey, 10".....	1	Each.....	1.82	1.82
Wicks, lantern.....	4	do.....	.05	.20
Total.....				79.062



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 225-a

MOTORS AND VEHICLES DIVISION.

Item name: Wagon, combat, limbered.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.453 per 1,000 men per year.....	226

Total requirements..... 226

Deductions:	
Cost Basis: Net requirements.....	226
\$500.00. Total cost of net requirements.....	\$113,000.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
3.7721 combat wagons issued per 1,000 men in a field army, based on Tables of Organization revised to August 1, 1918.  
Estimated life by wagon manufacturers 100 months, based on previous experience.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 225-a.

MOTORS AND VEHICLES DIVISION.

Item name: Accessories, set for combat wagon, as per attached list.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.453 per 1,000 men per year.....	226

Total requirements..... 226

Deductions:

Cost BASIS: Net requirements..... 226  
\$107.73. Total cost of net requirements..... \$24, 346. 98

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Same as wagons, combat, limbered.  
One set of accessories furnished with each new combat wagon.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Present contract price.

Set of accessories for combat wagon.

Article.	Number required.	Unit.	Unit cost.	Total cost.
Axes and handle.....	16	Each.....	\$1. 20	\$19. 20
Bags, nose.....	4	do.....	2. 30	9. 20
Blocks, brake.....	2	do.....	. 28	. 56
Bolts, carriage, 1/4" x 1 1/4".....	3	do.....	. 005	. 015
Bolts, carriage, 1/4" x 2".....	3	do.....	. 007	. 021
Bolts, carriage, 1/4" x 2 1/2".....	3	do.....	. 008	. 024
Bolts, carriage, 1/4" x 2 3/4".....	3	do.....	. 01	. 03
Bolts, carriage, 1/4" x 3".....	3	do.....	. 011	. 033
Bolts, carriage, 1/4" x 4".....	3	do.....	. 013	. 039
Bolts, tire, 1/4" x 2 1/2".....	2	do.....	. 005	. 01
Bolts, tire, 1/4" x 3".....	2	do.....	. 007	. 014
Brush, horse.....	1	do.....	2. 15	2. 15
Bucket, canvas.....	2	do.....	. 78	1. 56
Buckle, harness, B. R. Jap., 1/4".....	1	do.....	. 013	. 013
Buckle, harness, B. R. Jap., 1/2".....	1	do.....	. 013	. 013
Buckle, harness, B. R. Jap., 1".....	1	do.....	. 015	. 015
Buckle, harness, B. R. Jap., 2".....	1	do.....	. 05	. 05
Comb, curry.....	1	do.....	. 17	. 17
Cover, canvas.....	1	do.....	7. 98	7. 98
Doubletree.....	1	do.....	1. 94	1. 94
Grease, axle.....	4	Pound.....	. 06	. 24
Halters, with chain.....	4	Each.....	4. 25	17. 00
Hatchet, with handle.....	1	do.....	. 65	. 65
Jack, ratchet lever, 2-ton capacity, 18" or 20" high.....	1	do.....	4. 50	4. 50
Lanterns, Vesta, complete with globe.....	2	do.....	1. 32	2. 64
Links, open, 1/4".....	3	do.....	. 008	. 024
Links, open, 1/2".....	3	do.....	. 007	. 021

*Set of accessories for combat wagon—Continued.*

Article.	Number required.	Unit.	Unit cost.	Total cost.
Links, open, 1"	3	Each	\$0.006	\$0.018
Nut, axle, right	1	do.	.12	.12
Nut, axle, left	1	do.	.12	.12
Oil, neat's-foot, 1 gallon	1	Can	.95	.95
Picks and handles, R. R.	16	Each	.70	11.20
Pliers, W. C., 8"	1	Pair	.80	.80
Ring, harness, Jap., 1"	1	Each	.005	.005
Ring, harness, Jap., 1"	1	do.	.01	.01
Ring, harness, Jap., 1 1/2"	1	do.	.015	.015
Ring, harness, Jap., 2"	1	do.	.025	.025
Rivets, iron, 1/4" x 1 1/2"	6	do.	.001	.006
Rivets, iron, 1/4" x 2"	4	do.	.003	.012
Rope, manila, 1/2"	12	Pound	.22	2.64
Shovels, short handle	16	Each	1.00	16.00
Singletrees	2	do.	1.02	2.04
Snap, harness, 1"	1	do.	.08	.08
Snap, harness, 1 1/2"	1	do.	.05	.05
Snap, harness, 2"	1	do.	.07	.07
Soap, harness	1	Cake	.40	.40
Sponge, coarse	1	Each	.50	.50
Twine, cable laid	1	Ball	.55	.55
Whip, lash	1	Each	.48	.48
Whip, stock	1	do.	.50	.50
Wire, stovepipe	1	Spool	.05	.05
Wrench, monkey, 10"	1	Each	1.82	1.82
<b>Total</b>				<b>107.78</b>

## ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 225-a.

MOTOR AND VEHICLE DIVISION.

*Item name:* Wagon limber caisson.*Appropriation:* Formerly procured by Engineers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance	500,000	0.23 per 1,000 men per year	115

Total requirements..... 115

**Deductions:**

<b>COST BASIS:</b>	Net requirements.....	115
\$1,320.	Total cost of net requirements.....	\$151,800.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 576 wagon limber caissons, as initial equipment for Engineer troop of 500,000 men. Estimated life of equipment, 5 years.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Recent purchases.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 225-a.

MOTOR AND VEHICLE DIVISION.

*Item name:* Wagon spring tool.*Appropriation:* Formerly procured by Engineers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500,000	0.01 per 1,000 men per year.....	5

Total requirements..... 5

**Deductions:**

<b>COST BASIS:</b>	Net requirements.....	5
<b>\$544.</b>	Total cost of net requirements.....	<b>\$2,720.00</b>

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 24 wagon spring tools, as initial for Engineer troop of 500,000 men.

Estimated life of equipment, 5 years.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 225-a.

MOTORS AND VEHICLES DIVISION.

*Item name:* Wagon, mountain, 1917 model.*Appropriation:*

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.018 per 1,000 men per year.....	9

Total requirements..... 9

**Deductions:**

COST BASIS:	Net requirements.....	9
\$300.00.	Total cost of net requirements.....	\$2,700.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

0.152 mountain wagon issued per 1,000 men in a field army, based on Tables of Organization revised to August 1, 1918.  
Estimated life by wagon manufacturers, 100 months, based on previous experience.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Present contract price.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 225-a.

MOTORS AND VEHICLES DIVISION.

Item name: Accessories, set for mountain wagon, as per list attached.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.018 per 1,000 men per year.....	9

Total requirements..... 9

Deductions:

COST BASIS:	Net requirements.....	9
\$34.31.	Total cost of net requirements.....	\$308. 79

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Same as for mountain wagon.  
One set of accessories furnished with each new mountain wagon.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.

Set of accessories for spring wagon.

Article.	Number required.	Unit.	Unit cost.	Total cost.
Axe and handle.....	1	Each.....	\$1. 20	\$1. 20
Bags, nose.....	2	do.....	2. 30	4. 60
Bolts, carriage, 1/4" x 1 1/2".....	2	do.....	.005	.010
Bolts, carriage, 1/4" x 1 1/2".....	2	do.....	.007	.014
Bolts, carriage, 1/4" x 2".....	2	do.....	.007	.014
Bolts, carriage, 1/4" x 2 1/2".....	2	do.....	.008	.016
Bolts, carriage, 1/4" x 3".....	2	do.....	.012	.024
Bolts, king.....	1	do.....	.30	.30
Bolts, tire, 1/4" x 2 1/2".....	4	do.....	.005	.020
Brush, horse.....	1	do.....	2. 15	2. 15
Bucket, G. I.....	1	do.....	.53	.53
Buckle, harness, B. R. Jap., 1".....	1	do.....	.013	.013
Buckle, harness, B. R. Jap., 1".....	1	do.....	.013	.013
Buckle, harness, B. R. Jap., 1".....	1	do.....	.015	.015
Buckle, harness, B. R. Jap., 2".....	1	do.....	.05	.05
Comb, curry.....	1	do.....	.17	.17
Grease, axle.....	3	Pounds...	.06	.18
Hame.....	1	Pair.....	1. 00	1. 00
Halters, with chain.....	2	Each.....	4. 25	8. 50
Hatchet, with handle.....	1	do.....	.65	.65
Lantern, Vesta, complete with globe.....	1	do.....	1. 32	1. 32
Links, open, 1/4".....	3	do.....	.008	.024
Nut, axle, right.....	1	do.....	.12	.12
Nut, axle, left.....	1	do.....	.12	.12
Oil, neat's-foot, 1/2 gallon.....	1	Can.....	.95	.95
Pickax and handle.....	1	Each.....	.80	.80
Pliers, W. C., 8".....	1	Pair.....	.80	.80

*Set of accessories for spring wagon—Continued.*

Article.	Number required.	Unit.	Unit cost.	Total cost.
Ring, harness, Jap., 1"	1	Each.....	\$0.005	\$0.005
Ring, harness, Jap., 1"	1	do.....	.01	.01
Ring, harness, Jap., 1½"	1	do.....	.015	.015
Ring, harness, Jap., 2"	1	do.....	.025	.025
Rivets, iron, ½" x 1½"	3	do.....	.001	.003
Rivets, iron, ½" x 2"	3	do.....	.003	.009
Ropes, manila, ½"	12	Pounds...	.32	3.84
Singletree.....	1	Each.....	1.02	1.02
Snap, harness, 1"	1	do.....	.03	.03
Snap, harness, 1½"	1	do.....	.05	.05
Snap, harness, 2"	1	do.....	.05	.05
Spade, short handle.....	1	do.....	.98	.98
Sponge, coarse.....	1	do.....	.50	.50
Strap, hame, lower.....	1	do.....	.50	.50
Strap, hame, upper.....	1	do.....	.40	.40
Twine, cable laid.....	1	Ball.....	.55	.55
Whip, carriage.....	1	Each.....	.75	.75
Wire, stovepipe.....	1	Spool.....	.05	.05
Wrench, monkey, 10"	1	Each.....	1.82	1.82
<b>Total.....</b>				<b>34.31</b>

## ESTIMATE FOR

**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 225-b.

## MOTORS AND VEHICLES DIVISION.

*Item name:* Purchase of wagon parts.*Appropriation:*

Maintenance: For 500,000 men for one year as per list attached.

Cost Basis: As per list attached.

Total cost of net requirements, \$724,500.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated by wagon manufacturers as 15 per cent per year of total value of vehicles in use.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Present contract price.

Name.	Number needed in field army.	Value per vehicle.	Total value.	Spare parts estimated at 15 per cent.
Wagon, ambulance.....	402	\$350	\$140,700	\$21,105
Wagon, combat, limbered.....	5,207	500	2,603,500	390,525
Wagon, escort.....	10,114	200	2,022,800	303,420
Wagon, mountain.....	210	300	63,000	9,450
				724,500

It is estimated that 15 per cent of the total value of the number of vehicles in use will be required for repairs and spare parts during any one year.

QUARTERMASTER CORPS, MOTORS AND VEHICLES DIVISION:

Item No. 227-a. Item name: Carts.

Cart, ration.....	\$20,750.00
Accessories, set for ration cart.....	7,227.64
Carts, water.....	46,475.00
Accessories, set for water cart.....	5,996.12
Cart, medical.....	5,364.00
Accessories, set for medical cart.....	1,238.40
Carts, wire complete (2-horse).....	28,500.00
Total.....	115,551.16

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 227-a.  
MOTORS AND VEHICLES DIVISION.

Item name: Cart, ration.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements
Maintenance.....	500	0.333 per 1,000 men per year.....	166

Total requirements..... 166

Deductions:

COST BASIS:	Net requirements.....	166
\$125.	Total cost of net requirements.....	\$20,750

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
2.776 ration carts issued per 1,000 men in a field army, based on Tables of Organization revised to August 1, 1918.  
Estimated life by wagon manufacturers 100 months, based on previous experience.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 227-a.

MOTORS AND VEHICLES DIVISION.

Item name: Accessories, set for ration cart, as per list attached.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.333 per 1,000 men per year.....	166
Total requirements.....			166

## Deductions:

COST BASIS:	Net requirements.....	166
\$43.54.	Total cost of net requirements.....	\$7, 227. 64

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Same as for ration cart.

One set of accessories furnished with each new ration cart.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Present contract price.

*Set of accessories for ration cart.*

Article.	Number required.	Unit.	Unit cost.	Total cost.
Ax and handle.....	1	Each.....	\$1. 20	\$1. 20
Bags, nose.....	2	do.....	2. 30	4. 60
Bolts, carriage, $\frac{1}{8}$ " x $1\frac{1}{2}$ ".....	2	do.....	.005	.010
Bolts, carriage, $\frac{1}{8}$ " x $1\frac{1}{2}$ ".....	2	do.....	.0065	.013
Bolt, carriage, $\frac{1}{8}$ " x 2".....	1	do.....	.007	.007
Bolts, carriage, $\frac{1}{8}$ " x $2\frac{1}{2}$ ".....	2	do.....	.008	.016
Bolts, carriage, $\frac{1}{8}$ " x 3".....	2	do.....	.014	.028
Bolt, carriage, $\frac{1}{8}$ " x $4\frac{1}{2}$ ".....	1	do.....	.020	.020
Bolts, carriage, $\frac{1}{8}$ " x 8".....	4	do.....	.040	.160
Bolts, tire, $\frac{1}{8}$ " x $2\frac{1}{2}$ ".....	2	do.....	.005	.010
Bolts, tire, $\frac{1}{8}$ " x 3".....	2	do.....	.007	.014
Brush, horse.....	1	do.....	2. 15	2. 15
Bucket, G. I.....	1	do.....	.53	.53
Buckle, harness, B. R. Jap., $\frac{1}{8}$ ".....	1	do.....	.013	.013
Buckle, harness, B. R. Jap., $\frac{1}{8}$ ".....	1	do.....	.013	.013
Buckle, harness, B. R. Jap., 1".....	1	do.....	.015	.015
Buckle, harness, B. R. Jap., 2".....	1	do.....	.05	.05
Comb, curry.....	1	do.....	.17	.17
Covers, canvas.....	1	do.....	10. 00	10. 00
Grease, axle.....	4	Pound.....	.08	.24
Hame, cart harness, dump.....	1	Each.....	1. 00	1. 00
Halters, with chain.....	2	do.....	4. 25	8. 50
Hatchet, with handle.....	1	do.....	.65	.65
Lantern, Vesta, complete with globes.....	1	do.....	1. 32	1. 32
Links, open, $\frac{1}{8}$ ".....	2	do.....	.008	.016
Links, open, $\frac{1}{8}$ ".....	2	do.....	.007	.014
Nut, axle, right.....	1	do.....	.12	.12
Nut, axle, left.....	1	do.....	.12	.12

Set of accessories for ration cart—Continued.

Article.	Number required.	Unit.	Unit cost.	Total cost.
Oil, neat's-foot, $\frac{1}{2}$ gallon .....	1	Can.....	\$0.95	\$0.95
Pickax and handle.....	1	Each.....	.89	.89
Pins, cotter, $\frac{1}{4}$ x 1.....	3	...do.....	.006	.018
Pins, cotter, $\frac{1}{4}$ x 2.....	3	...do.....	.019	.057
Pliers, W. C., 8".....	1	Pair.....	.80	.80
Ring, harness, Jap., $\frac{1}{2}$ ".....	1	Each.....	.005	.005
Ring, harness, Jap., 1".....	1	...do.....	.01	.01
Ring, harness, Jap., 1 $\frac{1}{2}$ ".....	1	...do.....	.015	.015
Ring, harness, Jap., 2".....	1	...do.....	.025	.025
Rivets, iron, $\frac{1}{4}$ " x 1 $\frac{1}{2}$ ".....	3	...do.....	.001	.003
Rivets, iron, $\frac{1}{4}$ " x 2".....	3	...do.....	.008	.024
Ropes, manilla, $\frac{1}{2}$ ".....	12	Pound.....	.32	3.84
Snap, harness, 1".....	1	Each.....	.03	.03
Snap, harness, 1 $\frac{1}{2}$ ".....	1	...do.....	.05	.05
Snap, harness, 2".....	1	...do.....	.07	.07
Spade, short handle.....	1	...do.....	.98	.98
Sponge, coarse.....	1	...do.....	.50	.50
Strap, hame, lower.....	1	...do.....	.50	.50
Strap, hame, upper.....	1	...do.....	.40	.40
Twine, cable laid.....	1	Ball.....	.55	.55
Whip, lash.....	1	Each.....	.48	.48
Whip, stock.....	1	...do.....	.50	.50
Wire, stovepipe.....	1	Spool.....	.05	.05
Wrench, monkey, 10".....	1	Each.....	1.82	1.82
Total.....				43.54

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 227-a.

MOTOR AND VEHICLES DIVISION.

Item name: Carts, water.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.338 per 1,000 men per year.....	169

Total requirements..... 169

Deductions:

COST BASIS:	Net requirements.....	169
\$275.00.	Total cost of net requirements.....	\$46,475

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
2.815 water carts issued per 1,000 men in a field army, based on Tables of Organization revised to August 1, 1918.  
Estimated life, by manufacturers (wagon), 100 months, based on previous experience.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 227-a.

MOTORS AND VEHICLES DIVISION.

Item name: Accessories, set for water cart, as per list attached.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance. ....	500	0.338 per 1,000 men per year.....	169

Total requirements..... 169

Deductions:

COST BASIS: Net requirements..... 169  
\$35.48. Total cost of net requirements. .... \$5, 996. 12

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Same as for water cart.  
One set of accessories furnished with each new water cart.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Present contract price.

Set of accessories for water cart.

Article.	Number required.	Unit.	Unit cost.	Total cost.
Ax and handle.....	1	Each.....	\$1. 20	\$1. 20
Bags, nose.....	2	do.....	2. 30	4. 60
Bibbs, brass, 1/2".....	4	do.....	. 50	2. 00
Bolts, carriage, 1/2" x 1 1/2".....	2	do.....	. 005	. 010
Bolts, carriage, 1/2" x 1 1/2".....	2	do.....	. 007	. 014
Bolt, carriage, 1/2" x 2".....	1	do.....	. 007	. 007
Bolts, carriage, 1/2" x 2 1/2".....	2	do.....	. 008	. 016
Bolts, carriage, 1/2" x 3".....	2	do.....	. 012	. 024
Bolt, carriage, 1/2" x 4 1/2".....	1	do.....	. 020	. 020
Bolts, carriage, 1/2" x 8 1/2".....	4	do.....	. 040	. 160
Bolts, tire, 1/2" x 2 1/2".....	2	do.....	. 005	. 010
Bolts, tire, 1/2" x 3".....	2	do.....	. 008	. 016
Brush, horse.....	1	do.....	2. 15	2. 15
Bucket, G. I.....	1	do.....	. 53	. 53
Buckle, harness, B. R. Jap., 1/2".....	1	do.....	. 013	. 013
Buckle, harness, B. R. Jap., 1/2".....	1	do.....	. 013	. 013
Buckle, harness, B. R. Jap., 1".....	1	do.....	. 015	. 015
Buckle, harness, B. R. Jap., 2".....	1	do.....	. 05	. 05
Comb, curry.....	1	do.....	. 17	. 17
Grease, axle.....	3	Pound.....	. 06	. 18
Hame, cart harness, dump.....	1	Each.....	1. 00	1. 00
Halters, with chain.....	2	do.....	4. 25	8. 50
Hatchet, with handle.....	1	do.....	. 65	. 65
Lantern, Vesta, complete with globe.....	1	do.....	1. 32	1. 32
Links, open, 1/2".....	2	do.....	. 008	. 016
Links, open, 1/2".....	2	do.....	. 007	. 014
Nut, axle, right.....	1	do.....	. 12	. 12
Nuts, axle, left.....	1	do.....	. 12	. 12
Oil, neat's-foot, 1/2 gallon.....	1	Can.....	. 95	. 95

Set of accessories for water cart—Continued.

Article.	Number required.	Unit.	Unit cost.	Total cost.
Pickax and handle.....	1	Each.....	\$0.89	\$0.89
Pins, cotter, 1/4 x 1.....	3	do.....	.007	.021
Pins, cotter, 1/4 x 2.....	3	do.....	.020	.060
Pliers, W. C., 8".....	1	Pair.....	.80	.80
Ring, harness, Jap., 1 1/2".....	1	Each.....	.005	.005
Ring, harness, Jap., 1".....	1	do.....	.01	.01
Ring, harness, Jap., 1 1/4".....	1	do.....	.015	.015
Ring, harness, Jap., 2".....	1	do.....	.025	.025
Rivets, iron, 1/4" x 1 1/4".....	3	do.....	.001	.003
Rivets, iron, 1/4" x 2".....	3	do.....	.003	.009
Ropes, manila, 1/2".....	12	Pound.....	.32	3.84
Snap, harness, 1".....	1	Each.....	.03	.03
Snap, harness, 1 1/4".....	1	do.....	.05	.05
Snap, harness, 2".....	1	do.....	.07	.07
Spade, short handle.....	1	do.....	.98	.98
Sponge, coarse.....	1	do.....	.50	.50
Strap, hame, lower.....	1	do.....	.50	.50
Strap, hame, upper.....	1	do.....	.40	.40
Twine, cable laid.....	1	Ball.....	.55	.55
Whip, lash.....	1	Each.....	.48	.48
Whip, stock.....	1	do.....	.50	.50
Wire, stovepipe.....	1	Spool.....	.05	.05
Wrench, monkey, 10".....	1	Each.....	1.82	1.82
Total.....				35.48

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 227-a.

MOTORS AND VEHICLES DIVISION.

Item name: Cart, medical.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements
Maintenance.....	500	0.072 per 1,000 men per year.....	36

Total requirements..... 36

Deductions:

Cost BASIS:	Net requirements.....	36
\$149.00.	Total cost of net requirements.....	\$5,364.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
.6035 medical carts issued per 1,000 men in field army, based on Tables of Organization revised to August 1, 1918.  
Estimated life by wagon manufacturers, 100 months, based on previous experience.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Present contract price.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 227-a.

MOTORS AND VEHICLES DIVISION.

Item name: Accessories, set for medical cart, as per list attached.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	0.072 per 1,000 men per year .....	36

Total requirements ..... 36

## Deductions:

COST BASIS: Net requirements ..... 36  
 \$34.40. Total cost of net requirements ..... \$1, 238. 40

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Same as for medical cart.

One set of accessories furnished with each new medical cart.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Present contract price.

*Set of accessories for medical cart.*

Article.	Number required.	Unit.	Unit cost.	Total cost.
Ax and handle .....	1	Each .....	\$1. 20	\$1. 20
Bags, nose .....	2	....do .....	2. 30	4. 60
Bolts, carriage, $\frac{1}{4}$ " x $1\frac{1}{2}$ " .....	2	....do .....	.005	.010
Bolts, carriage, $\frac{1}{4}$ " x $1\frac{1}{2}$ " .....	2	....do .....	.007	.014
Bolt, carriage, $\frac{1}{4}$ " x 2" .....	1	....do .....	.008	.008
Bolts, carriage, $\frac{1}{4}$ " x 2 $\frac{1}{2}$ " .....	2	....do .....	.008	.016
Bolts, carriage, $\frac{1}{4}$ " x 3" .....	2	....do .....	.012	.024
Bolt, carriage, $\frac{1}{4}$ " x 4 $\frac{1}{2}$ " .....	1	....do .....	.020	.020
Bolts, carriage, $\frac{1}{4}$ " x 8 $\frac{1}{2}$ " .....	4	....do .....	.04	.016
Bolts, tire, $\frac{1}{4}$ " x 2 $\frac{1}{2}$ " .....	2	....do .....	.049	.098
Bolts, tire, $\frac{1}{4}$ " x 3" .....	2	....do .....	.074	.150
Brush, horse .....	1	....do .....	2. 15	2. 15
Bucket, G. I. ....	1	....do .....	.53	.53
Buckle, harness, B. R. Jap., $\frac{1}{4}$ " .....	1	....do .....	.013	.013
Buckle, harness, B. R. Jap., $\frac{1}{4}$ " .....	1	....do .....	.013	.013
Buckle, harness, B. R. Jap., 1" .....	1	....do .....	.016	.016
Buckle, harness, B. R. Jap., 2" .....	1	....do .....	.05	.05
Comb, curry .....	1	....do .....	.17	.17
Grease, axle .....	3	Pounds .....	.06	.18
Hames, cart harness, dump .....	1	Each .....	1.00	1.00
Halters, with chain .....	2	....do .....	4.25	8.50
Hatchet, with handle .....	1	....do .....	.65	.65
Lantern, Vesta, complete with wicks and globe, white and green.	1	....do .....	1. 70	1. 70
Links, open, $\frac{1}{4}$ " .....	2	....do .....	.008	.016
Links, open, $\frac{1}{4}$ " .....	2	....do .....	.007	.014
Nut, axle, right .....	1	....do .....	.12	.12
Nut, axle, left .....	1	....do .....	.12	.12
Oil, neat's-foot, $\frac{1}{4}$ gallon .....	1	Can .....	.95	.95
Pickax and handle .....	1	Each .....	.89	.89
Pins, cotter, $\frac{1}{4}$ x 1 .....	3	....do .....	.007	.021

*Set of accessories for medical cart—Continued.*

Article.	Number required.	Unit.	Unit cost.	Total cost.
Pins, cotter, $\frac{1}{4}$ x 2.....	3	Each.....	\$0.090	\$0.090
Pliers, W. C., 8".....	1	Pair.....	.80	.80
Rings, harness, Jap., $\frac{3}{4}$ ".....	1	Each.....	.013	.013
Ring, harness, Jap., 1".....	1	do.....	.015	.015
Ring, harness, Jap., 1 $\frac{1}{2}$ ".....	1	do.....	.03	.03
Ring, harness, Jap., 2".....	1	do.....	.05	.05
Rivets, iron, $\frac{1}{4}$ " x 1 $\frac{1}{2}$ ".....	3	do.....	.001	.003
Rivets, iron, $\frac{1}{4}$ " x 2".....	3	do.....	.003	.009
.....	12	Pounds.....	.23	2.76
.....	1	Each.....	.03	.03
.....	1	do.....	.05	.05
.....	1	do.....	.07	.07
.....	1	Cake.....	.40	.40
.....	1	Each.....	.98	.98
.....	1	do.....	.50	.50
.....	1	do.....	.50	.50
.....	1	do.....	.46	.46
.....	1	Ball.....	.55	.55
.....	1	Each.....	.48	.48
.....	1	do.....	.50	.50
.....	1	Spool.....	.05	.05
0".....	1	Each.....	1.82	1.82
Total.....				34.40

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS

Item No. 227-a.

MOTORS AND VEHICLES DIVISION.

Item name: Carts, wire, complete (2-horse).

Procured in the past by Office Chief Signal Officer.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div.; 4 base div.	1.250 per div. per year.....	30

## Deductions:

COST BASIS:	Net requirements.....	30
\$950.00 ea.	Total cost of net requirements.....	\$28,500.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

5.20 carts, wire, complete (2-horse), issued per div.

1.250 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Approximate average all previous contracts.

# ESTIMATE FOR EQUIPMENT MATERIAL AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 227-b.

MOTORS AND VEHICLES DIVISION.

*Item name:* Purchase of cart parts.*Appropriation:*

Maintenance: For 500,000 men for one year as per list attached.

Cost BASIS as per list attached.

Total cost of net requirements, \$250,765.05.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated by wagon manufacturers as 15 per cent per year of total value of vehicles in use.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Present contract price.

Name.	Number needed in field army.	Value per ve- hicle.	Total value.	Spare parts estimated at 15 per cent.
Cart, medical.....	833	\$149	\$124,117	\$18,617.55
Cart, ration.....	3,832	125	479,000	71,850.00
Cart, water.....	3,886	275	1,068,650	160,297.50
	.....	.....	.....	250,765.05

It is estimated that 15 per cent of the total value of the number of vehicles in use will be required for repairs and spare parts during any one year.

# ESTIMATE FOR EQUIPMENT MATERIAL AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

MOTOR TRANSPORT CORPS.

Item No. 229-d.

*Appropriation:**Item name:* Hire of automobiles.

Cost BASIS: Allotment previous year. \$10,000.

Total cost of net requirements, \$10,000.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

This is figured as a lump sum; it being considered wise to have some appropriation under this item.

## 5. REMARKS:

This intended solely to cover cases that might be called emergency.

ESTIMATE FOR  
EQUIPMENT MATERIAL AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 229-e.

SALVAGE DIVISION.

Appropriation:

Item name: Repair—Tops, auto.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	18 div . . .	25 per div . . . . .	450

Deductions:  
COST BASIS: Estimated salvage and reclamation . . . . . \$8, 437. 50  
\$18. 75.  
Total cost of net requirements . . . . . 8, 437. 50

\*“Working basis” is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Tables of organization and fundamental allowances.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
\$75 (price) by 25 per cent (cost of repairs). \$18.75.  
Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

ESTIMATE FOR  
EQUIPMENT MATERIAL AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

MOTOR TRANSPORT CORPS.

Item No. 229-e.

Appropriation:

Item name: Repair automobiles, spare parts, tires, etc.

Deductions:  
COST BASIS: 8 per cent of the value of equipment necessary for Army of 500,000 men on peace basis. Equipment on hand.  
Total cost of net requirements, \$579,528.

- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
This is placed at 8 per cent of the value of automobile equipment, \$7,244,100.  
Cost of automobile equipment one Army, 8 per cent, \$579,528.

5. REMARKS:  
This is also low on account of large surplus already owned by the Government.  
Equipment of automobiles for army of 500,000 men on peace basis.

Type.	No.	Cost.	Total.
A. Light open . . . . .	4, 432	\$475	\$2, 105, 200
B. Medium open . . . . .	940	950	893, 000
C. Medium closed . . . . .	601	1, 100	661, 100
D. Heavy open . . . . .	397	2, 400	952, 800
E. Heavy closed . . . . .	752	3, 500	2, 632, 000
Total . . . . .	7, 122	.....	7 244, 100



ESTIMATE FOR  
EQUIPMENT MATERIAL AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

MOTOR TRANSPORT CORPS.

Item No. 229-h.

Item name: Hire of motor trucks.

Appropriation:

Cost basis: Allotment previous year, \$270,000.

Total cost of net requirements, \$10,000.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

This is figured as a lump sum, it being considered wise to have some appropriation under this item.

REMARKS:

This intended solely to cover cases that might be called emergency.

ESTIMATE FOR  
EQUIPMENT MATERIAL AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 229-i.

SALVAGE DIVISION.

Item name: Repair cushions, truck.

Appropriation:

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	18 divs..	280 per div.....	5, 040

Deductions:

Cost basis: Estimated salvage and reclamation.....	\$15, 120. 00
\$3. Total cost of net requirements.....	15, 120. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Tables of organization and fundamental allowances.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

\$12 (price) by 25 per cent (cost of repair)=\$3.

Date: 11/27/18. Checked by Man. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT MATERIAL AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## MOTOR TRANSPORT CORPS.

Item No. 229-i.

*Item name:* Repair motor trucks, spare parts, tires, etc.*Appropriation:*

COST BASIS: 8 per cent of the value of equipment necessary for army of 500,000 men on peace basis. Equipment on hand.

Total cost of net requirements, \$15,751,846.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

This is placed at 8 per cent of the value of motor truck equipment, \$196,898,080.  
Cost of motor truck equipment, one army, 8 per cent, \$15,751,846.

## 5. REMARKS:

This is also low on account of large surplus already owned by the Government.

*Equipment of motor trucks for army of 500,000 men on peace basis.*

Type.	Number.	Cost.	Total.
<b>Ambulances:</b>			
A. Light.....	1,530	\$500	\$765,000
B. Heavy.....	4,140	1,725	7,141,500
Total.....	5,670	.....	7,906,500
<b>Motor trucks:</b>			
A. Light delivery.....	3,012	415	1,249,980
B. Light repair.....	1,126	925	1,041,550
C. Class AA.....	2,082	1,000	3,331,200
D. Class A.....	6,210	2,800	17,388,000
E. Class B.....	17,491	4,000	69,964,000
F. 4-wheel drive.....	15,548	4,300	66,856,400
Total.....	45,469	.....	159,831,130
<b>Artillery tractors:</b>			
4-wheel drive.....	4,000	4,300	17,200,000
Do.....	754	5,000	3,770,000
2-wheel drive.....	138	5,000	690,000
Total.....	4,892	.....	21,660,000
<b>Trailers:</b>			
Kitchen.....	2,648	700	1,853,600
Cargo.....	3,867	650	2,513,550
Ordnance.....	674	1,000	674,000
Air service.....	2,674	650	1,738,100
Tank service.....	601	1,200	721,200
Total.....	10,464	.....	7,500,450
<b>Grand total.....</b>	<b>66,495</b>	<b>.....</b>	<b>196,898,080</b>

# ESTIMATE FOR EQUIPMENT MATERIAL AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

MOTOR TRANSPORT CORPS.

Item No. 229-l.

*Item name:* Hire of motorcycles.*Appropriation:***5. REMARKS:**

Due to the passing of the emergency, this is not considered a necessary item.

**QUARTERMASTER CORPS.**

Item No. 229-m. Item name, Repairing motorcycle top and cushions.

*Appropriation:* Army transportation.**SUMMARY.**

Repair tops, motorcycle.....	\$1,350
Repair cushions, small motorcycles.....	2,160
<b>Total.....</b>	<b>3,510</b>

# ESTIMATE FOR EQUIPMENT MATERIAL AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 229-m.

**SALVAGE DIVISION.***Item name:* Repair tops, motorcycle.*Appropriation:*

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	18 div...	60 per div.....	1,080

**Deductions:**

<b>COST BASIS:</b>	Estimated salvage and reclamation.....	\$1,350.00
\$1.25.	Total cost of net requirements.....	1,350.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Tables of organization and fundamental allowances.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

\$5 (price) or 25 per cent (cost of repair)=\$1.25.

Date, 11/27/18. Checked by man. Estimate made by R. J. B.

ESTIMATE FOR  
EQUIPMENT MATERIAL AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 229-m.

SALVAGE DIVISION.

Item name: Repair cushions, small motorcycle.

Appropriation:

	Strength.	Working basis.*	Requirements.
Maintenance:.....	18 div...	120 per div.....	2, 160

Deductions:

Cost Basis:	Estimated salvage and reclamation.....	\$2, 160. 00
\$1.	Total cost of net requirements.....	2, 160. 00

- \*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Tables of organization and fundamental allowances.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
\$4 (price) × 25 per cent (cost of repair)=\$1.

ESTIMATE FOR  
EQUIPMENT MATERIAL AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

MOTOR TRANSPORT CORPS.

Item No. 229-m.

Item name: Repair motorcycles, spare parts, tires, etc.

Appropriation:

Deductions:

Cost Basis: 8 per cent of the value of equipment necessary for Army of 500,000 men on peace basis, equipment on hand.  
Total cost of net requirements, \$746,398.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Equipment for motorcycles for Army of 500,000 men on peace basis:
- |                        |         |            |               |
|------------------------|---------|------------|---------------|
| Motorcycles, S. C..... | 22, 537 | \$400 each | \$9, 014, 800 |
| Motorcycles, Solo..... | 1, 801  | 175 each   | 315, 175      |
|                        | 24, 338 |            | 9, 329, 975   |
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Cost of motorcycle equipment, one Army, \$9,329,975.  
8 per cent spare parts, tires, etc., 8 per cent, \$746,398.

# ESTIMATE FOR EQUIPMENT MATERIAL AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

MOTOR TRANSPORT CORPS.

Item No. 229-p.

*Item name:* Repair of bicycles, spare parts, tires, etc.*Appropriation:*

**COST BASIS:** 8 per cent of the value of equipment necessary for army of 500,000 men on peace basis. Equipment on hand.

Total cost of net requirements, \$43,439.20.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Equipment for army of 500,000 men on peace basis: 15,514 bicycles, at \$35 each, \$542,990.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Equipment of bicycles, one army costs, \$542,990.

8 per cent spare parts, tires, etc., \$43,439.20.

## BUREAU OF FINANCE.

## CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 230-a.

*Item name:* Drayage, cartage, and hauling: At posts.*Appropriation:* Supplies, Services, and Transportation.

## ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.

Total estimated cost: \$21,000.

Cost based on prewar cost.

## Explanation:

From this item is paid the cost of hauling and drayage of stores and supplies at Army posts.

The expenditure under this item for the fiscal year 1916 was \$33,904.02, but in view of the fact that a large quantity of motor vehicles will undoubtedly be on hand after demobilization of the present Army which will be turned over to the various posts where owned means of transportation was inadequate, commercial drayage, in a large measure, can be dispensed with, except in Alaska where the present mode of transportation will be used. The estimate for 1920 is based on probable expenditures for above purposes as follows:

Alaska.....	\$13,000
Canal Zone.....	3,000
Coast Artillery posts.....	3,000
Mobile Army posts.....	2,000
	<hr/>
	21,000

## BUREAU OF FINANCE.

## CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 230-b.

*Item name:* Drayage, cartage, and hauling: At depots.*Appropriation:* Supplies, Services, and Transportation.

## ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.

Total estimated cost: \$5,000.

Cost based on prewar cost.

## Explanation:

From this item is paid the cost of drayage and cartage at the several supply depots, where there are not owned means of transportation or where such transportation is insufficient.

The expenditure under this item during the fiscal year 1916 for a strength of approximately 100,000 was \$21,066.70, but in view of the fact that all depots will have owned means of transportation sufficient for practically all needs, estimate is made for only \$5,000.

## BUREAU OF FINANCE.

## CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 230-c.

*Item name:* Drayage, cartage, and hauling: At arsenals and armories.*Appropriation:* Supplies, Services, and Transportation.

## ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.

Total estimated cost: \$12,000.

Cost based on prewar cost.

## Explanation:

From this item is paid the cost of drayage, cartage, and hauling at the various arsenals and armories in connection with the transportation of ordnance, ordnance stores, and supplies. Practically the entire amount estimated for under this item will be used to reimburse the Ordnance Department for hauling performed by that department for the Quartermaster Corps. The expenditure under this item during 1916 for a strength of approximately 116,000 was \$5,268.03.

## BUREAU OF FINANCE.

## CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 230-d.

*Item name:* Drayage, cartage, and hauling: In the field.*Appropriation:* Supplies, Services, and Transportation.

## ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.

Total estimated cost: \$5,000.

Cost based on prewar cost.

## Explanation:

From this item is paid the cost of hauling for troops in the field in connection with maneuvers, field service, etc.

The expenditure under this item during the fiscal year 1916 for a strength of 116,000 was \$3,412.90. Owing to the fact that all organizations will be adequately supplied with owned means of transportation, it is thought \$5,000 will be sufficient to cover all needs.

ESTIMATE FISCAL YEAR 1920, \$33,262,500.

Item No. 233.

*Item:* Ships, purchase of.

United States, \$33,262,500.

## Remarks:

*United States.*—This item is included to provide funds for reimbursing the United States Shipping Board for vessels which it is contemplated the War Department will secure from them for the replacement of old vessels now in the Regular Army Transport Service, the vessels now in the service being old, and due to their age require constant and excessive repairs. The following table shows the vessels it is contemplated will be turned over by the Shipping Board.

## Trans-Atlantic service:

4 transports, at \$2,812,500 each.....	\$11, 250, 000
--	----------------

(This number does not include the *Great Northern* and *Northern Pacific*, which were purchased from War Department funds and turned over to the Shipping Board during the emergency. These two vessels added to the 4 mentioned will give 6 vessels in the trans-Atlantic service.)

## Atlantic coastwise (Panama, Cuba, Porto Rico, St. Thomas, etc.):

2 transports, at \$2,812,500.....	5, 625, 000
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## Trans-Pacific service (Philippines, Guam, Japan, etc.):

4 transports, at \$2,812,500.....	11, 250, 000
1 collier, at \$2,537,500.....	2, 537, 500

## Alaskan service:

1 transport (4,000 tons), at \$2,812,500.....	1, 300, 000
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## Pacific coastwise (Panama canal, etc.):

1 transport (4,000 tons).....	1, 300, 000
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Total.....	33, 262, 500
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*Philippine Islands.*—No estimate.

ESTIMATE FISCAL YEAR 1920, \$402,000.

Subitem No. 234-b, c, and d.

Item: Deck, engine, and steward's supplies.

United States.....	\$350, 500
Philippine Islands.....	51, 500
Total.....	402, 000

Remarks:

*United States.*—This item provides for the procurement of all deck, engine, and quartermaster steward's supplies (except fuel and water) as well as regular equipment required for the proper maintenance and operation of the vessels of the owned Army Transport Service.

The estimate is based on costs for previous years and the estimate for the fiscal year 1919, allowance being made for the increased cost of all supplies.

*Philippine Islands.*—This item is based upon costs of previous years and the estimate for the fiscal year 1919, increased in an amount estimated sufficient to provide for the advanced cost of all supplies and materials.

ESTIMATE FISCAL YEAR 1920, \$12,000.

Subitem No. 234-i.

Item: Water.

United States.....	\$7, 500
Philippine Islands.....	4, 500
Total.....	12, 000

Remarks:

*United States.*—This item provides for the procurement of all fresh water required for boiler use and other purposes on board vessels of the owned Army Transport Service, and is based on costs for the fiscal year 1918 and the estimate for 1919.

*Philippine Islands.*—This estimate is based on the estimate of the Philippine government for the fiscal year 1919, increased to provide for the increased cost of this service.



ESTIMATE FISCAL YEAR 1920, \$29,750.

Subitem No. 234-g.

*Item: Laundry.*

United States.....	\$29, 000
Philippine Islands.....	750
<b>Total.....</b>	<b>29, 750</b>

Remarks:

*United States.*—This item provides for the laundering of such equipment of vessels of the owned Army Transport Service as linens, bunk bottoms, etc.

The estimate is based on costs for the fiscal years 1917 and 1918, allowance being made for the increased cost of all supplies and labor, and it is not anticipated that the equipment at the Alcatraz Disciplinary Barracks will be able to handle the entire requirements of this service, necessitating the placing of contracts for a great quantity of this work.

*Philippine Islands.*—This estimate is based on costs for the fiscal year 1918, with allowance for an increase in the cost of supplies and labor.

ESTIMATE FISCAL YEAR 1920, \$21,750.

Subitem No. 234-h.

*Item: Pilotage.*

United States.....	\$20, 250
Philippine Islands.....	1, 500
<b>Total.....</b>	<b>21, 750</b>

Remarks:

*United States.*—This item provides for the payment of pilotage charges on vessels of the owned Army Transport Service, and is based on fixed rates for this service which are controlled by the various pilots' associations operating under rules and regulations fixed by State laws.

The estimate is based on costs for the fiscal year 1918.

*Philippine Islands.*—The estimate for this department is the same as the appropriation for the fiscal year 1919.

ESTIMATE FISCAL YEAR 1920, \$195,000.

Subitem No. 234-i.

*Item: Stevedoring.*

United States.....	\$155, 000
Philippine Islands.....	40, 000
<b>Total.....</b>	<b>195, 000</b>

Remarks:

*United States.*—This item provides for stevedoring and longshoring services in connection with the proper loading and stowing of cargoes aboard outgoing vessels and the removal of like cargo from incoming ships of the owned Army Transport Service. It also includes provision for payment for such services performed under contract.

The estimate is based on costs of previous years increased to cover advanced costs of labor.

*Philippine Islands.*—This estimate is based on costs of previous years, allowance being made for the increased cost of labor and additional cargo, it is anticipated will be handled in the Philippines.

ESTIMATE FISCAL YEAR 1920, \$2,150.

Subitem No. 234-j.

*Item:* Removing ashes.

United States.....	\$1, 500
Philippine Islands.....	650
Total.....	2, 150

**Remarks:**

*United States.*—This item provides for the disposal of ships' ashes outside the harbor limits as required by harbor regulations at the various ports. It is increased proportionately to care for any contingencies that may arise in this class of services and for the advanced cost of all labor, etc.

*Philippine Islands.*—The estimate of the Philippine department is based on costs of previous years with allowance for increased costs of labor.

ESTIMATE FISCAL YEAR 1920, \$30,000.

Subitem No. 234-k.

*Item:* Painting and cleaning.

United States.....	\$24, 500
Philippine Islands.....	5, 500
Total.....	30, 000

**Remarks:**

*United States.*—This item provides for the chipping, cleaning, and painting of the interior and exterior surfaces of the vessels of the owned Army Transport Service, to prevent deterioration of the hull, fixtures, and equipment to the greatest possible extent. This work is accomplished between trips as these vessels arrive in port from time to time, allowance is made to care for the increased cost of material, equipment, and labor necessary for the work.

*Philippine Islands.*—The estimate for this department is based on previous costs with allowance for the advanced costs of materials and labor.

ESTIMATE FISCAL YEAR 1920, \$80,000.

Subitem No. 234-l.

*Item:* Miscellaneous expenses.**Remarks:**

*United States.*—This item provides for all miscellaneous expenses of the owned Army Transport Service, including office expenses of the general superintendent, and dock forces directly connected with the operation of the various transports and not specifically provided for in other items of this estimate, such as dock charges, rental of storehouses, lease of submarine signals, electric current, compressed air, handling lines, and other shore expenses.

Estimate is based on costs of previous years, increased to care for contingencies and advanced costs of labor and supplies.

*Philippine Islands.*—This estimate is based on available costs of previous years and increased cost of labor and supplies.

ESTIMATE FISCAL YEAR 1920, \$4,500.

Subitem No. 234-m.

*Item: Towage.*

United States, \$4,500.

## Remarks:

*United States.*—This item provides for the hire of tug service when required for docking and undocking transports, when owned tugs are not available or of sufficient power.

Estimate is based on costs for the fiscal year 1919 with allowance to care for contingencies and the increased costs of towing facilities.

*Philippine Islands.*—No estimate is submitted for this department, it being believed that owned tugs will be available for the needs of this service.

ESTIMATE FISCAL YEAR 1920, \$687,000.

Subitem No. 234-n.

*Item: Repairs.*

United States.....	\$537, 000
Philippine Islands.....	150, 000
Total.....	687, 000

## Remarks:

*United States.*—This item provides for ordinary repairs required for the proper maintenance of the vessels of the owned Army Transport Service.

The estimate is based on costs of previous years and advanced costs of materials and the class of labor required for this class of service, as well as the increasing ages of the present owned Army transports, necessitating more extensive repairs.

*Philippine Islands.*—The estimate for this department is based on costs for previous years, increased to provide for the advanced costs of labor and materials.

ESTIMATE FISCAL YEAR 1920, \$5,461,000.

Subitem No. 235-a.

*Item:* Purchase and construction.

United States, \$5,461,000.

## Remarks:

*United States.*—This item provides for the purchase or construction of the following harbor-boat equipment:

* 1 Panama Canal bay and river tender .....	\$350,000
*15 tugs, 100-foot, at \$250,000 .....	3,750,000
15 tugs, 65-foot, at \$40,000 .....	600,000
12 standard Army tenders, "Q" class, at \$28,000 .....	336,000
	<hr/>
	5,036,000

and for the following boats for the Division of Military Aeronautics:

5 aero retrievers, at \$35,000 .....	\$175,000
5 seagoing chasers, at \$50,000 .....	250,000
	<hr/>
	425,000

The Panama Canal tender is a general utility passenger and freight vessel required for the services of the military posts bordering the canal and the terminal harbors, and is especially required in view of the fact that many of the posts are inadequately supplied with means of communication other than water.

The tugs enumerated are necessary for the movements of varied harbor floating equipment and for the operation of the Regular Army Transport Service, and will meet a demand which can not be adequately furnished by ordinary commercial harbor towboats.

The 12 standard Army tenders of the so-called "Q" class are a type of small boat considered almost indispensable in the maintenance of the service of supply and passenger transportation between isolated Army posts and main headquarters.

The five aeroplane retrievers and five seagoing aeroplane chasers are for the air service of the Division of Military Aeronautics and are intended to furnish a service that has been found to be exceedingly necessary in the training of aviators, it being desired that every aeroplane operating over water should be properly followed, and in case of sudden descent these boats to proceed to rescue the plane before it should sink.

*Philippine Islands.*—No estimate.

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\* To be purchased from the Emergency Fleet Corporation, provided they can be constructed by that corporation.

ESTIMATE FISCAL YEAR 1920, \$285,000.

Subitem No. 235-b.

*Item: Repairs.*

United States.....	\$160, 000
Philippine Islands.....	125, 000
Total.....	285, 000

*Remarks:*

*United States.*—This item provides for the necessary repairs to river and harbor boats to maintain them in proper serviceable condition. Due to increased use of these boats during the fiscal year 1919 it is contemplated a great many repairs will be required to boats in this service. This and the increasing cost of all materials and labor have been given consideration in the preparation of this estimate, which is based on costs for the fiscal year 1918.

*Philippine Islands.*—The estimate for this department is based on costs for the fiscal year 1918 and previous years, allowance being made for the increased cost of materials and labor.

ESTIMATE FISCAL YEAR 1920, \$112,000.

Subitem No. 235-d.

*Item: Supplies.*

United States.....	\$80, 000
Philippine Islands.....	32, 000
Total.....	112, 000

*Remarks:*

*United States.*—Funds estimated for under this item are intended to provide for the procurement of all deck and engine supplies (except fuel and water) and equipment required for the proper maintenance and operation of the harbor-boat service. The estimate is based on costs of previous years and for the fiscal year 1918, and allowance is made for the increased costs of all supplies.

*Philippine Islands.*—The estimate for the Philippines Department is based on the reported cost in the fiscal year 1917 and available costs for 1918, and anticipates the increased cost of all supplies.

ESTIMATES, FISCAL YEAR 1920, \$4,250.

Subitem No. 235-f.

*Item: Water.*

United States, \$4,250.

*Remarks:*

*United States.*—Fresh water required for boiler use on vessels of the river and harbor boat service is provided from funds included in this estimate. The estimate is based on costs of the fiscal year 1918 and previous years, and allowance is made to care for increased cost of this service and for additional boats which it is estimated will be required in this service.

*Philippine Islands.*—No estimate.

ESTIMATES, FISCAL YEAR 1920, \$85,000.

Subitem No. 235-g.

*Item:* Hire of substitute and supplemental boats.

United States, \$85,000.

## Remarks:

*United States.*—This item provides for the hire or charter of commercial boats to replace those of the regular service temporarily out of commission while undergoing repairs; also for the hire of such boats as are necessary to supplement the owned service, same proving insufficient to meet requirements at all times, and for boats which will be in the service pending construction of additional boats required. The estimate is based on available costs for the fiscal year 1918 and the increased cost of hire of commercial craft.

*Philippine Islands.*—No estimate.

ESTIMATES, FISCAL YEAR 1920, \$114,250.

Subitem No. 235-k.

*Item:* Miscellaneous expenses.

United States.....	\$65,250
Philippine Islands.....	49,000
Total.....	114,250

## Remarks:

*United States.*—Funds included in this item are required for the payment of all miscellaneous expenses incurred in the river harbor boat service, not provided for in the other subitems of the service, such as laundry, removal of ashes, storage charges for small boats during the winter season, hire of divers' services, other shore expenses, etc., and also for the purpose of reimbursing the ordnance and engineer depots for proportionate costs of operation of their boats when used in quartermaster work. The estimate is based on available costs for the fiscal year 1918 and is the same as for the fiscal year 1919.

*Philippine Islands.*—This estimate is based on costs for 1917 and 1918, and allowance is made for the increased costs of all items required in this service.

ESTIMATE FISCAL YEAR 1920, \$593,000.

Subitem No. 236-a.

*Item:* Purchase or construction.

United States, \$593,000.

**Remarks:**

*United States.*—This item provides for the acquisition by purchase and construction of the following boats for use in Coast Artillery work:

4 mine-laying distribution box boats, at \$35,000 each,.....	\$140,000
3 artillery dispatch boats, at \$35,000 each.....	105,000
6 artillery survey launches, 62 feet long, 400-horsepower, at \$50,000.....	300,000
30 24-foot motor mine yawls, at \$16,000 each.....	48,000
	<hr/>
	593,000

The four mine laying distribution box boats are for use in the upkeep of the various mine fields in the United States, and can be used not only for training but for the actual and dangerous work of maintaining mine fields.

The artillery dispatch boats are for use in connection with the drill and dispatch of troops during Coast Artillery target practice and heavy gun maneuvers.

The Coast Artillery requirements for the six artillery survey launches represents a very necessary type which is required by artillery commanders in making rapid maneuvers with targets and long-range firing, and for the general purpose of drilling and training of troops at many widely located Army posts.

The mine yawls are a very small type of boat used for the very necessary operations connected with the maintenance of the various mined harbors of the country.

*Philippine Islands.*—No estimate.

ESTIMATE FISCAL YEAR 1920, \$215,000.

Subitem No. 236-b.

*Item:* Repairs.

United States.....	\$195,000
Philippine Islands.....	20,000
	<hr/>
Total.....	215,000

**Remarks:**

*United States.*—This item provides for the accomplishment of necessary repairs and alterations to vessels engaged in Coast Artillery work, to maintain them in proper serviceable condition. This estimate is based on costs for the fiscal year 1918 and previous years, and the additional boats already in this service. Allowance is also made for the increased cost of labor and materials.

*Philippine Islands.*—This estimate is based on costs for the fiscal year 1918 and allowances are made for contingencies that may arise due to increased costs.

ESTIMATE FISCAL YEAR 1920, \$170,000.

Subitem No. 236-d.

*Item:* Supplies.

United States.....	\$149,000
Philippine Islands.....	21,000
Total.....	170,000

**Remarks:**

*United States.*—Funds included in this estimate are intended to provide for the procurement of all running supplies (except fuel and water) as well as equipment required for the maintenance and operation of vessels of the Coast Artillery Service. The estimate is based on available costs for the fiscal year 1918, allowance being made for the increased cost of all supplies.

*Philippine Islands.*—This estimate is based on available costs for the fiscal year 1918, allowance being made for the increased cost of all supplies.

ESTIMATE FISCAL YEAR 1920, \$5,100.

Subitem No. 236-i.

*Item:* Water.

United States.....	\$4,600
Philippine Islands.....	500
Total.....	5,100

**Remarks:**

*United States.*—This item provides for the procurement of fresh water for boiler and other uses for vessels of the Coast Artillery Service. The estimate contemplates the additional number of vessels for this service as well as the increased cost of this item of supplies and is based on costs for the fiscal year 1918 and previous years.

*Philippine Islands.*—This estimate is based on similar costs for the fiscal year 1918 and the increased cost of this item of supply.

ESTIMATE FISCAL YEAR 1920, \$165,000.

Subitem No. 236-g.

*Item:* Hire of substitute and supplemental boats.

United States.....	\$165,000
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**Remarks:**

*United States.*—This item provides for the charter or hire of commercial vessels to be used as substitutes for regular vessels out of commission on account of repairs, or for vessels required to supplement the owned vessels for towing targets, vessel tracking, searchlight drill, and other such service of the Coast Artillery. The estimate is based on available costs for the fiscal year 1918 and previous years, allowance being made for the increased cost of this class of service.

*Philippine Islands.*—No estimate.



ESTIMATE FISCAL YEAR 1920, \$25,000.

Subitem No. 236-h.

*Item: Miscellaneous expenses.*

United States.....	\$23, 500
Philippine Islands.....	1, 500
Total.....	25, 000

**Remarks:**

*United States.*—This item provides for all miscellaneous services not specifically provided for under other items, such as hire of divers' services, storage of small boats during the winter months, rental of submarine signal apparatus, and sundry small items, necessary for the operation of this service.

The estimate is based on available costs for the fiscal year 1918 and previous years, and allowance is made for the greatly increased cost of all services.

*Philippine Islands.*—This item is based on similar costs for previous years, increased to provide for the advanced cost of all services.

ESTIMATE FISCAL YEAR 1920, \$106,344,600.

Item No. X234-a.

*Item:* Charter hire.

United States, \$106,344,600.

**Remarks:**

*United States.*—This item provides for the payment of charter hire on chartered vessels, which it is estimated will be in the service of the War Department under the supervision and control of the Water Transportation Service, during the fiscal year 1920.

*Troop ships.*

Number estimated required during first half of fiscal year.....	118
Number estimated required during last half of fiscal year.....	60
Estimated number required in service continually during fiscal year.....	89

*Charter hire for troop ships.*

First half 118 ships less 17 interned ships = 101 at average tonnage of 10,000 tons at \$7.75 per ton per month=.....	\$46,965,000
Last half 60 ships less 17 interned ships = 43 at average tonnage of 10,000 tons at \$7.75 per ton per month=.....	19,995,000
Total charter hire for troop ships=.....	66,960,000

*Cargo ships.*

Number estimated required during first half of fiscal year.....	230
Number estimated required during last half of fiscal year.....	115
Estimated number required in service continually during fiscal year .....	173

Of the 230 cargo ships estimated required in service during first half of fiscal year, it is assumed 150 will be Government-owned boats and interned boats on which the War Department will not be required to pay charter hire to the United States Shipping Board.

This assumption is based on the provision made in the deficiency act approved November 4, 1918, and estimate is predicated on similar provision being made by Congress in the Army appropriation acts for the fiscal year 1920.

Chartered cargo vessels, first half fiscal year—80 at average tonnage of 8,000 dead-weight tons, at average charter rate of \$4.15 per dead-weight ton.....	\$15,936,000
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Of the 115 cargo ships estimated required in service during the last half of the fiscal year it is assumed that at least 50 per cent will be owned and / or interned ships.

Chartered cargo vessels last half fiscal year—58, at average tonnage of 8,000 dead-weight tons, at average charter rate of \$4.15 per dead-weight ton..	11,553,600
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Total charter hire for cargo ships.....	27,489,600
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*Refrigerator ships.*

Number estimate required for continuous service during fiscal year 1920—10, at average of 8,000 dead-weight tons, at average time-form charter rate of \$6.25 per dead-weight ton per month=\$500,000 per month.....	\$6,000,000
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*Tankers.*

Number estimated required for continuous service during fiscal year 1920—3, at average of 10,000 dead-weight tons, at average time-form charter rate of \$6 per dead-weight ton per month=\$180,000 per month..	\$2,160,000
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*Cross-channel boats.*

Number estimated required for continuous service during fiscal year 1920—25, at average of 3,000 dead-weight tons, at average charter rate of \$4.14 per dead-weight ton (bare boat) per month, \$311,250 per month. \$3, 735, 000

## RECAPITULATION OF CHARTER HIRE.

Troop.....	\$66, 960, 000
Cargo.....	27, 489, 600
Refrigerator.....	6, 000, 000
Tankers.....	2, 160, 000
Cross-channel.....	3, 735, 000
Total.....	106, 344, 600

The charter hire on troop ships is figured on a bare-boat rate, taking into consideration the speed, which provided for an increased rate of charter.

On cargo ships the minimum rate of charter hire is used, assuming that the present rate obtaining between the Shipping Board and vessel owners will continue to obtain during the fiscal year 1920.

The charter hire on the refrigerator and tank ships is figured on a time-form charter rate, as it is believed these ships will render more satisfactory service if operated under this form of charter due to the crews being skilled in this class of seamanship.

In the case of 25 channel boats, the rate used is the minimum rate on bare-boat cargo ships, and is believed sufficient to cover the charter of this class of boats required to provide service between England and French ports in the coal service.

As in previous estimates it is remarked that this item of the estimate provides for the reimbursement of the Shipping Board for all chartered vessels turned over by the Shipping Board for the account of the War Department and all chartered vessels operated by the Shipping Board for the War Department, as well as payment of charter for any vessel chartered for the account of the War Department, provision to be made by Congress that no charter hire will be required from the War Department for vessels furnished or to be furnished during the fiscal year 1920, when such vessels are owned by the United States Government.

ESTIMATE FISCAL YEAR 1920, \$156,850,160.

Item No. X234-b.

*Item:* Maintenance and operation.

United States, \$156,850,160.

Remarks: Amount of fuel to be deducted from this item, \$2,151,000.

*United States—*

Average number troop ships in service continually during fiscal year...	89
Average number cargo ships in service continually during fiscal year...	173
Total.....	262
Cost of maintenance and operation of 262 troop and cargo ships operated by the Navy Department for account of the Army, for which the Army will be required to reimburse the Navy Department at estimated cost of \$31,640 per ship per month (not including subsistence and pay of naval personnel).....	\$99,476,160
Average number of refrigerator ships continually in service during fiscal year.....	10
Average number of tank ships continually in service during fiscal year..	3
Total.....	13
Cost of maintenance and operation of 13 refrigerator and tank ships operated on time form of charter for which operation the War Department will be required to furnish only fuel, water, and pay port charges, estimated at \$10,000 per ship per month.....	\$1,560,000
Average number of cross-channel boats in service continually during fiscal year 1920 operated on bare-boat form of charter, maintenance and operation of which will be at expense of War Department.....	25
Cost of maintenance and operation of 25 cross-channel boats at average cost of \$40,000 per ship per month, or \$48,000 per year.....	\$12,000,000
Summary of maintenance and operation:	
Troop and cargo ships.....	\$99,476,160
Refrigerator and tank ships.....	1,560,000
Cross-channel boats.....	12,000,000
Total.....	113,036,160
Provision for restoration to original condition on account of turning vessels back to owners 75 per cent of 89 troop ships, or 66, at estimated average cost of \$400,000 each.....	\$26,400,000
50 per cent of 173 cargo ships, or 86, at estimated average cost of \$150,000 each.....	12,900,000
Total cost of restoration.....	39,300,000
Provision for conversion for other uses with the services.	
Estimated requirements for conversion to other Army uses, such as fitting for troops and reconverting for cargo 25 per cent of 173 cargo ships at estimated average cost of \$155,000 (based on costs for refitting 21 vessels now in service).....	6,665,000
RECAPITULATION.	
Maintenance and operation.....	*\$113,036,160
Restoration.....	39,300,000
Refitting.....	6,665,000
Total.....	156,850,160

The above estimate provides for the maintenance, operation, and upkeep of the trans-Atlantic fleet of transports, including provision for reimbursing the Navy and United States Shipping Board for

\* Amount of fuel deducted from this item, \$2,151,000.

expenses of operation of all vessels operated by them for the account of the War Department, and for payment of fuel, water, and port charges in connection with vessels operated on time form of charter, which charter expressly provides that charter shall provide the above-named supplies and services.

The estimate is based on available costs for the fiscal years 1918 and 1919, after consultation with the Navy Department and United States Shipping Board.

ESTIMATE FISCAL YEAR 1920, \$31,178,625. Item No. X234-c.

*Item:* Reimbursement for loss and to cover restoration after damage by floating mines, derelicts, etc.

United States, \$31,178,625.

Remarks:

This item is intended to provide funds for compensating owners of vessels chartered for the movements of troops from overseas stations and also supplies to overseas stations, for the loss or destruction of same by floating mines, derelicts, collisions, etc.

The estimate is arrived at by the use of figures obtained from the insurance department of the United States Shipping Board and is in lieu of carrying insurance in the regular way. The figures used to determine the amount necessary to cover this risk are as follows:

Marine risks: 4½ per cent of value of ship, per annum.

War risk: ½ per cent per round trip voyage or approximately 3 per cent of ship per annum, totaling 7½ per cent per annum.

The value of the ship is an arbitrary one arrived at by placing value at \$175 per D. W. T. for ships over 10 years old and \$200 per D. W. T. for ships 10 years of age or under.

*Troop ships.*—Average number estimated in service continually during fiscal year 1920: 89, at average value of \$1,750,000 per ship or \$155,750,000 by 7½ per cent = \$11,291,875.

*Other ships.*—Average number estimated in service continually during fiscal year 1920: 173 trans-Atlantic cargo, 10 refrigerator, 3 tankers, and 25 cross-channel cargo, totaling 211 ships, at average value of \$1,300,000 based on average tonnage of 7,450 tons per ship—\$274,300,000 by 7½ per cent = \$19,886,750.

RECAPITULATION.

Troop.....	\$11, 291, 975
Other ships.....	19, 886, 750
Total.....	31, 178, 625

ESTIMATE FISCAL YEAR 1920, \$27,750,000.

Item No. X234-d.

*Item:* Shore establishment.

United States, \$27,750,000.

**Remarks:**

This item provides for the maintenance of shore establishments at the several ports of embarkation and debarkation in the United States and France, for the transportation and handling of troops and impedimenta connected therewith, and for the loading of supplies and equipment for transportation to and from overseas ports. This item provides for the stevedoring requirements and for the acquisition by hire or otherwise, maintenance, operation, and upkeep of the harbor floating equipment in connection with the chartered transport service at the ports of embarkation and debarkation necessary in the handling, loading, shifting, and unloading of transports.

This estimate is based on available cost data for the fiscal year 1918-19, and is considered sufficient to cover the requirements of this service at the time of estimate.

The following table outlines the estimated requirements at the several ports:

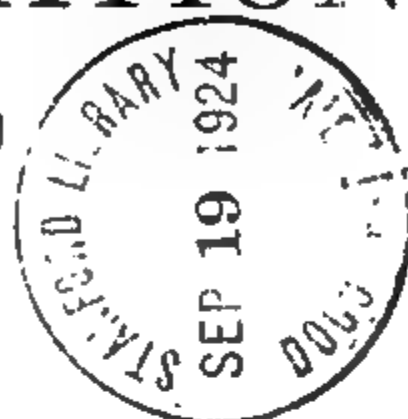
New York.....	\$10,000,000
Newport News and Norfolk.....	5,000,000
Baltimore.....	500,000
Philadelphia.....	250,000
Boston.....	1,000,000
Additional requirements in United States.....	1,000,000
*Ports in France.....	10,000,000
	<hr/>
	27,750,000

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\*The item for ports in France is purely an estimate, no accurate data being obtainable.

# ARMY APPROPRIATION BILL

1920



## CLOTHING, CAMP AND GARRISON EQUIPAGE

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Printed for the use of the Committee on Military Affairs of the House

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### PART 4

WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1919





CLOTHING, CAMP AND GARRISON EQUIPAGE.

Item.	Amount.	Division making estimate.
249. Cloth.....		C. E.
250. Woolens.....		C. E.
251. Materials.....		C. E.
252. Clothing.....	32,599,567.84	C. E.
252a. Manufacture of by Quartermaster Corps.....		C. E.
252b. Manufacture of by contractors.....		C. E.
252c. Purchase of from contractors.....		C. E.
252d. Salvage of clothing, hats, and shoes.....	5,729,150.00	Salvage.
253. Clothing not drawn due men on discharge.....		C. E.
254. Altering.....		R.
A-255. Equipment of reclamation establishments.....		R.
255. Fitting.....		C. E.
A-255a. Propaganda.....		R.
256. Washing.....		R.
257. Cleaning.....	1,148,500.00	Salvage.
258. Equipage.....	634,356.55	Salvage.
258a. Manufacture of by Quartermaster Corps.....	328,278.55	C. E.
258b. Purchase of from contractors.....	109,788.95	C. S.
258c. Salvage of tents.....	7,827.60	C. S.
259. Toilet articles.....	218,003.40	C. S.
260. Barber's materials.....		C. S.
261. Toilet materials.....		C. S.
262. Toilet kits.....		C. S.
263. Housewives.....		C. S.
264. Packing.....	1,000,000.00	C. E.
265. Handling.....		C. E.
266. Similar necessities.....		C. E.
267. Citizens' outer clothing.....	18,380.00	A.
268. Indemnity.....		C. and E.
177. Towels.....		
Total.....	11,793,862.89	

QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 249. Item name: Cloth. Appropriation: Clothing, camp and garrison equipage.

Cheesecloth, white.....	\$618.24
Cloth, survey signal, muslin, red.....	288.00
Cloth, survey signal, muslin, white.....	192.00
Gauze, plain, bleached, 50 yards in bolt.....	826.88
Muslin, unbleached, yards.....	25,807.50
Total.....	27,732.62

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 249.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Cheesecloth, white.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	15,456 per 1,000 men per year.....	7,728 yards.

Total requirements..... 7,728 yards.

Deductions:

COST BASIS:	Net requirements.....	7,728
\$0.08.	Total cost of net requirements.....	\$618.24

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineeres.  
Basis: 7,728 yards cheesecloth, initial supply for Engineer troops of 500,000 men. Estimated as one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES,

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 249.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Formerly procured by Engineers.

Item name: Cloth, survey signal, muslin, red.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	500,000	1.92 per 1,000 men per year. . . . .	960 yards.

Total requirements..... 960

Deductions:

Cost BASIS:      Net requirements..... 960

\$0.30      Total cost of net requirements..... \$288.00

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- Authority: Issue Tables, Chief of Engineers.
- Basis: 960 signal cloths, initial supply for Engineer troops of 500,000 men.
- Estimated as one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 249.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Formerly procured by Engineers.    *Item name:* Cloth, survey.  
signal, muslin, white.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	1.92 per 1,000 men per year.....	960 yards.

Total requirements..... 960

Deductions:	
COST BASIS:	Net requirements..... 960
\$0.20	Total cost of net requirements ..... \$192.00

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 960 cloth signals, initial supply for Engineer troops of 500,000 men.  
    Estimated as one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 249.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* (Previously purchased by Medical Department.)  
 plain bleached, 50 yards in bolt.

*Item name:* Gauze,

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	18 for 25,000 . . . . .	360 bolts.

Total requirements . . . . . 360

**Deductions:**

Net requirements . . . . . 360

Total cost of net requirements . . . . . \$826.88

**COST BASIS:**

\$0.0459375 per yard.

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

**ESTIMATE FOR**

**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 249.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* (Previously purchased by Medical Department.)  
 unbleached.

*Item name:* Muslin,

Initial equipment:	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	7,400 for 25,000 . . . . .	148,000 yards.

Total requirements . . . . . 148,000

**Deductions:**

Net requirements . . . . . 148,000

Total cost of net requirements . . . . . \$25,807.50

**COST BASIS:**

\$0.174375.

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

## QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 252. Item name: Clothing. Appropriation: Clothing, Camp and Garrison Equipage.

	Equipment, Army 500,000.	Amount required.
Aprons.....	44,185.38	.....
Belts, waist.....	32,843.75	.....
Boots, rubber, knee.....	150,000.00	.....
Brassards, blue, agt. and signalmen.....	2,306.50	2,306.50
Brassards, blue denim, M. P.....	1,170.00	1,170.00
Brassards, green, guides and scouts.....	801.45	801.45
Brassards, khaki, salvage parties.....	3,312.00	3,312.00
Brassards, red, messengers and orderlies.....	526.50	526.50
Brassards, white, trench cleaners.....	5,850.00	5,850.00
Brassards, yellow, carrying parties.....	3,627.00	3,627.00
Breeches, cotton.....	76,050.00	.....
Breeches, kersey lined.....	39,375.00	.....
Breeches, wool.....	118,500.00	29,625.00
Canvas, 10-ounce.....	3,168.00	.....
Caps, for cooks and bakers.....	14,866.88	.....
Caps, special, winter, motorcycle.....	12,656.25	.....
Caps, winter.....	123,750.00	.....
Chevrons, assorted.....	49,950.00	49,950.00
Coats, cotton.....	441,000.00	.....
Coats, denim, brown.....	217,968.75	.....
Coats, white duck.....	80,746.88	40,373.44
Coats, wool.....	917,812.50	458,906.25
Cords, hats, service.....	81,000.00	40,500.00
Drawers, cotton.....	506,250.00	.....
Drawers, wool.....	1,125,000.00	.....
Gloves, canton flannel, L. P.....	42,187.50	.....
Gloves, heavy leather.....	244,000.31	.....
Gloves, Jersey knit.....	182,250.00	.....
Gowns, convalescent (bath robes), 1.....	48,000.00	48,000.00
Gowns, operating, 1.....	6,493.50	6,493.50
Handkerchiefs, O. D. linen.....	36,450.00	36,450.00
Handkerchiefs, white, linen.....	14,850.00	14,850.00
Hats, denim.....	157,500.00	.....
Hats, oil skin.....	5,062.50	.....
Hats, service.....	751,500.00	.....
Headnets, mosquito.....	10,890.00	.....
Laces, leggings.....	17,497.50	.....
Laces, shoe.....	52,503.75	.....
Leggins, canvas, foot.....	531,562.50	.....
Leggins, canvas, mounted.....	126,562.50	.....
Mackinaws.....	27,300.00	27,300.00
Mittens, canton flannel, L. P.....	379,687.50	.....
Mittens, white canvas, heavy.....	646.88	646.88
Mufflers.....	47,025.00	.....
Overalls, 1-piece suits.....	28,125.00	.....
Overcoats.....	456,375.00	114,094.00
Overshoes, artic.....	351,562.50	.....
Pajamas, suits, 1 suit.....	51,840.00	51,840.00
Raincoats, dismounted.....	1,302,046.88	.....
Raincoats, mounted.....	91,406.25	.....
Shirts, cotton.....	219,048.75	.....
Shirts, flannel.....	875,437.50	218,859.38
Shoes, marching.....	2,615,625.00	1,307,812.50
Slippers, pairs.....	1,642.50	.....
Stockings, wool, heavy.....	530,268.75	.....
Stockings, wool, light.....	300,793.12	.....
Straps, hats, service.....	79,200.00	39,600.00
Suits, convalescent.....	56,208.00	56,208.00
Trousers, cotton.....	850,500.00	.....
Trousers, denim.....	290,625.00	.....
Trousers, white duck.....	80,746.88	40,373.44
Trousers, wool, O. D.....	1,130,625.00	.....
Undershirts, cotton.....	506,250.00	.....
Undershirts, wool.....	1,125,000.00	.....
Total.....	17,827,664.41	2,599,567.84

QUARtermaster Corps, CLOTHING AND EQUIPAGE DIVISION.

Item No. 252. Item name, Aprons. Appropriation, Clothing. Camp and Garrison Equipage.

Quartermaster Corps.....	\$37, 681. 88
Medical Department.....	6, 300. 00
Engineers.....	203. 50
Total.....	44, 185. 38

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARtermaster Corps.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Aprons, white, for cooks' and bakers' schools.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	130.5 per 1,000 men per year.....	65, 250

Total requirements..... \$55, 250

Deductions:	
Cost Basis:	
\$0.5775.	Net requirements..... 65, 250
	Total cost of net requirements..... \$37, 681. 88

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS,  
Based on estimated life of four months per apron per man. Estimated number of men who will wear aprons, 21,750.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* (Previously purchased by Medical Department.) *Item name:*  
Aprons, cooks, one.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	600 for 25,000 . . . . .	12, 000

Deductions:

Cost Basis:

\$0.525.

Total cost of net requirements, \$6,300.

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Aprons, leather.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	\$0.168 per 1,000 men per year . . . . .	74

Total requirements . . . . . 74

Deductions:

Cost Basis: Net requirements . . . . . 74  
\$2.75. Total cost of net requirements . . . . . \$203.50

\* "Working basis" is the quantity required per man or per unit for stated period. or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables. Chief of Engineers.

Basis: 367 aprons, initial equipment for Engineer troops of 500,000 men.

Estimated life of equipment. 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Belts, waist.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	500 per 1.000 men per year.....	250, 000

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	62, 500
\$0.1725.	Total deductions.....	62, 500
	Net requirements.....	187, 500
	Total cost of net requirements.....	\$32, 343. 75

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 2 years per belt per man.

Authority: Previous experience of officers.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE, AND RECLAMATION ESTIMATE:

Based on 25 per cent of maintenance. Authority—Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Boots, rubber, knee.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	100 per 1,000 men per year.....	50, 000

## Deductions:

COST BASIS: \$3.	Net requirements.....	50, 000
	Total cost of net requirements.....	\$150, 000

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 6 months per pair boots per man.

Authority: Mr. Thorne.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:                      Item name: Brassards, blue, Agent and signalmen.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	49.2 per 1,000 men per year.....	24,600

Total requirements..... 24,600

Deductions:

COST BASIS:      Net requirements..... 24,600  
\$0.0975.          Total cost of net requirements, ..... \$2,398.50

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 25 per 1,000 men; estimated life, 6 months.  
Based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:                      Item name: Brassards, blue denim, M. P.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	24 per 1,000 men per year.....	12,000

Total requirements..... 12,000

Deductions:

COST BASIS:      Net requirements..... 12,000  
\$0.0975.          Total cost of net requirements, ..... \$1,170.00

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 8 per 1,000 men; estimated life 4 months. Based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Brassards, green, guides, and scouts.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	16.44 per 1,000 men per year .....	8, 220

Total requirements..... 8, 220

Deductions:

COST BASIS: Net requirements..... 8, 220  
\$0.0975. Total cost of net requirements..... \$801. 45

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 8.25 per 1,000 men; estimated life 6 months. Based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Brassards, khaki, salvage parties.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	39.4 per 100 men per year .....	19, 200

Total requirements..... 19, 200

Deductions:

COST BASIS: Net requirements..... 19, 200  
\$0.1725. Total cost of net requirements..... \$3, 312. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 19.5 per 1,000 men; estimated life, 6 months. Based on previous experience.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Brassards, bed, messengers, and orderlies.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	10.8 per 1,000 men per year.....	5,400

Total requirements..... 5,400

## Deductions:

COST BASIS: Net requirements..... 5,400  
\$0.0975. Total cost of net requirements..... \$526.50

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 5 per 1,000 men; estimated life, 6 months. Based on previous experience.

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Brassards, white, trench cleaners.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	120 per 1,000 men per year.....	60,000

Total requirements..... 60,000

## Deductions:

COST BASIS: Net requirements..... 60,000  
\$0.0975. Total cost of net requirements..... \$5,850

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 62.5 per 1,000 men; estimated life, 6 months. Based on previous experiences.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Brassards, yellow, carrying parties.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	74.4 per 1,000 men per year . . . . .	37, 200

Total requirements . . . . . 37, 200

## Deductions:

COST BASIS: Net requirements . . . . . 37, 200  
 \$0.0975. Total cost of net requirements . . . . . \$3, 627

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 37.5 per 1,000 men; estimated life, 6 months. Based on previous experience.

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Breeches, cotton.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	200 per 1,000 men per year . . . . .	100. 00

## Deductions:

COST BASIS: Estimated salvage and reclamation . . . . . 40, 000  
 \$1.2675. Total deductions . . . . . 40, 000  
 Net requirements . . . . . 60, 000  
 Total cost of net requirements . . . . . \$76, 050. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 5 months pair breeches per man. Used 5 months in year, seasonable article. Authority: Gen. Wood, 7/29/18.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 40 per cent of maintenance. Authority: Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Breeches, kersey lined.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	15 per 1,000 men per year.....	\$7,500

## Deductions:

Cost Basis:	Net requirements.....	7,500
\$5.25.	Total cost of net requirements.....	\$39,375.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 5 months per pair breeches per man. Seasonable article used only 5 months per year. Authority: Gen. Wood, 6/15/18.

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Breeches, wool.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	200 per 1,000 men per year.....	100,000

## Deductions:

	Estimated salvage and reclamation.....	75,000
	Total deductions.....	75,000
Cost Basis:	Net requirements.....	25,000
\$4.74	Total cost of net requirements.....	\$118,500

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of seven months per pair breeches per man. Seasonable article, used only seven months per year 7/29/18.

Authority: Gen. Wood,

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 75 per cent of maintenance. Authority: Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Formerly purchased by engineers.      *Item name:* Canvas, 10-ounce.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	11.52 per 1,000 men per year.....	5,760

Total requirements..... 5,760

**Deductions:**

Cost BASIS:	Net requirements.....	5,760
\$0.55	Total cost of net requirements.....	\$3,168

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 5,760 yards canvas, initial supply for Engineer troops of 500,000 men.

Estimated as one year's supply.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY 1, 1919.

Recent purchases.

100826—19—PT 4—2

QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 252. Item name: Caps for cooks and bakers. Appropriation: Clothing, Camp and Garrison Equipage.

Quartermaster Corps.....	\$14, 191.88
Medical Department.....	675.00
Total.....	14, 866.88

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 252.  
CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Caps, white, for cooks and bakers' schools.

Initial equipment.	Strength.	Working basis. *	Requirements.
Maintenance.....	500	130.5 per 1,000 men per year.....	65, 250

Total requirements..... 65, 250

Deductions:

COST BASIS:	Net requirements.....	65, 250
\$0.2175.	Total cost of net requirements.....	\$14, 191.88

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on estimated life of four months per cap per man. Estimated number of men who will wear caps, 21,750.



ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Previously purchased by Medical Department. Item name: Caps, for cooks.

Initial equipment.	Strength.	Working basis. *	Requirements.
Maintenance.....	500, 000	300 for 25,000.....	6, 000

Total requirements..... 6, 000

Deductions:		
Cost Basis:	Net requirements.....	6, 000
\$0.1125.	Total cost of net requirements.....	\$675. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation: Item name: Caps, special, winter, motorcycle.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	15 per 1,000 men per year.....	7, 500

Deductions:		
Cost Basis:	Net requirements.....	7, 500
\$1.6875.	Total cost of net requirements.....	\$12, 656. 25

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of five months per cap per man. Seasonable article, issued only five months per year.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Authority: Capt. Byran.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation: Item name: Caps, winter.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	300 per 1,000 men per year.....	150,000

Deductions:  
Cost Basis: Net requirements..... 150,000  
\$0.825. Total cost of net requirements..... \$123,750.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.  
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of seven months per cap per man. Seasonable article, used only five months per year. Authority: Gen. Wood, 6/11/1918

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation: Item name: Chevrons (assorted).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	666 per 1,000 men per year.....	333,000

Total requirements..... 333,000

Deductions:  
Cost Basis: Net requirements..... 333,000  
\$0.15. Total cost of net requirements..... \$49,950.00

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.  
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 6 months per chevron per man.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Coats, cotton.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1,000 per 1,000 men per year.....	500, 000

**Deductions:**

Cost Basis:	Estimated salvage and reclamation.....	200, 000
\$1.47.	Total deductions.....	200, 000
	Net requirements.....	300, 000
	Total cost of net requirements.....	\$441, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Based on an estimated life of 5 months per coat per man. Seasonable article, used only 5 months per year. Authority: Gen. Wood, 7/29/1918.

**4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:**

Based on 40 per cent of maintenance. Authority: Gen. Wood.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Coats, denim (brown).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	750 per 1,000 men per year.....	375,000

Deductions:			
Cost BASIS: \$1.1625.	Estimated salvage and reclamation.....		187,500
	Total deductions.....		187,500
	Net requirements.....		187,500
	Total cost of net requirements.....		\$217,968.75

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 1 year and 4 months per coat, per man. Authority: Gen. Wood, 8/8/1918.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 50 per cent of maintenance. Authority: Gen. Wood.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Coats, white duck.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	130.5 per 1,000 men per year.....	65,250

Deductions:			
Cost BASIS: \$1.2375.	Net requirements.....		65,250
	Total cost of net requirements.....		\$80,746.83

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on estimated life of 4 months per coat per man. Estimated number of men who will wear coats, 21,750.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Coats, wool.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1,000 per 1,000 men per year.....	500, 000

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	375, 000
\$7.3425.	Total deductions.....	375, 000
	Net requirements.....	125, 000
	Total cost of net requirements.....	\$917, 812. 50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 7 months per coat per man. Seasonable article, issued only 7 months per year. Authority: Gen. Wood, 7/29/18.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 75 per cent of maintenance. Authority: Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Cords, hat, service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2,400 per 1,000 men per year.....	1, 200, 000

## Deductions:

COST BASIS:	Net requirements.....	1, 200, 000
\$0.0675.	Total cost of net requirements.....	\$81, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 5 months per cord per man. Authority: Gen. Wood, 4/30/1918.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation:

Item name: Drawers, cotton.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	3,000 per 1,000 men per year.....	1,500,000

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	375,000
\$0.15.	Total deductions.....	375,000
	Net requirements.....	1,125,000
	Total cost of net requirements.....	\$506,250.000

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 6 months per pair per man. Authority: Gen. Wood. Seasonable article used only 6 months per year.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

Based on 25 per cent of maintenance. Authority: Gen. Wood.

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation:

Item name: Drawers, wool.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2,000 per 1,000 men per year.....	1,000,000

## Deductions:

COST BASIS.	Estimated salvage and reclamation.....	250,000
\$1.50.	Total deductions.....	250,000
	Net requirements.....	750,000
	Total cost of net requirements.....	\$1,125,000

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 3 months per pair per man. Used 6 months in year. Authority: Gen. Wood, 7/29/1918.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 25 per cent of maintenance. Authority: Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation:

Item name: Gloves, canton flannel, L. P.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	300 per 1,000 men per year.....	150, 000

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	37, 500
\$0.375.	Total deductions.....	37, 500
	Net requirements.....	112, 500
	Total cost of net requirements.....	\$42, 187. 50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 4 months per pair per man. Authority: Gen. Wood. 5/1/1918.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 25 per cent of maintenance. Authority: Gen. Wood.

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation:

Item name: Gloves, heavy leather.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	811 per 1,000 men per year.....	405, 500

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	101, 375
\$0.8025.	Total deductions.....	101, 375
	Net requirements.....	304, 125
	Total cost of net requirements.....	\$244, 060. 31

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 7 months per pair per man. Authority: Gen Wood, 5/1/1918.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 25 per cent of maintenance. Authority: Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Gloves, jersey knit.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	2,000 per 1,000 men per year .....	1,000,000

## Deductions:

	Estimated salvage and reclamation .....	100,000
COST BASIS:	Total deductions .....	100,000
\$0.2025.	Net requirements .....	900,000
	Total cost of net requirements .....	\$182,250

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 3 months per pair per man. Seasonable article, used only 5 months per year. Authority: Gen. Wood, 5/1/1918.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 10 per cent of maintenance. Authority: Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* (Previously purchased by Medical Department.)  
Gowns, convalescent (bath robes).

*Item name:*

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500,000	600 for 25,000 .....	12,000

Total requirements .....

12,000

## Deductions:

	Net requirements .....	12,000
COST BASIS:	Total cost of net requirements .....	\$48,000
\$4.00.		

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Price supplied by the Medical Department.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* (Previously purchased by the Medical Department.)  
Gowns, operating (one).

*Item name:*

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	300 for 25,000.....	6,000

Total requirements..... 6,000

**Deductions:**

Cost BASIS: Net requirements..... 6,000  
\$1.08225. Total cost of net requirements..... \$6,493.50

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

# ESTIMATE FOR

# EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Handkerchiefs, O. D. linen.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	720 per 1,000 men per year.....	360,000

**Deductions:**

Cost BASIS: Net requirements..... 360,000  
\$0.10125. Total cost of net requirements..... \$36,450.00

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

**5. REMARKS:**

This article is for sale to officers, and the cost price will eventually revert to the Treasury through collections from sales.

**ESTIMATE FOR  
EQUIPMENT MATERIAL AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

*Appropriation:**Item name:* Handkerchief, white linen.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	360 per 1,000 men per year.....	180,000

**Deductions:**

<b>COST BASIS:</b>	Net requirements.....	180,000
\$0.0825	Total cost of net requirements.....	\$14,850.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

**5. REMARKS:**

This article is for sale to officers, and the cost price will eventually revert back to the Treasury through collections from sales.

**ESTIMATE FOR  
EQUIPMENT MATERIAL AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

*Appropriation:**Item name:* Hats, denim.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1,000 per 1,000 men per year.....	500,000

**Deductions:**

<b>COST BASIS:</b>	Net requirements.....	500,000
\$0.315.	Total cost of net requirements.....	\$157,500.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Based on an estimated life of 1 year per hat per man. Authority: Gen. Wood. 7/29/1918.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Hats, oilskin.

Initial equipment.	Strength.	Working basis.*	Requirements
Maintenance.....	500	18 per 1,000 men per year.....	9,000

## Deductions:

COST BASIS: Net requirements..... 9,000  
 \$0.5625. Total cost of net requirements..... \$5,062.50

\* "Working basis" is the quantity required per man or per unit for stated period:  
 or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 4 months per hat per man.

Authority: Gen. Wood, 4/30/1918.

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Hats, service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2,004 per 1,000 men per year.....	1,002,000

## Deductions:

COST BASIS: Estimated salvage and reclamation..... \$501,000  
 \$1.50. Total deductions..... 501,000  
 Net requirements..... 501,000  
 Total estimated cost of net requirements..... \$751,500

\* "Working basis" is the quantity required per man or per unit for stated period:  
 or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 6 months per hat per man.

Authority: Gen. Wood.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 50 per cent of maintenance. Authority: Gen. Wood.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Headnets, mosquito.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	52.8 per 1,000 men per year.....	26,400

Total requirements..... 26,400

Deductions:  
Cost Basis: Net requirements..... 26,400  
\$0.4125. Total cost of net requirements..... \$10,890.00

\*“Working basis” is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 105.4 per 1,000 men; estimated life, 12 months.  
Based on previous experience. Used only six months in year; seasonable article.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Laces, leggin.

Initial equipment.	Strength.	Working basis.*	Requirements
Maintenance.....	500	2,333 per 1,000 men per year.....	1,166,500

Total requirements..... 1,166,500

Deductions:  
Cost Basis: Net requirements..... 1,166,500  
\$0.015. Total cost of net requirements..... \$17,497.50

\*“Working basis” is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 2,000 per 1,000 men; estimated life 5 months. Based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Laces, shoe.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	4,667 per 1,000 men per year.....	2,333,500

Total requirements..... 2,333,500

Deductions:	
Cost Basis:	Net requirements..... 2,333,500
\$0.0225:	Total cost of net requirements..... \$52,503 75

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 2,000 per 1,000 men; estimated life 3 months, based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Leggins, canvas, foot.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	1,800 per 1,000 men per year.....	900,000

Deductions:	
Cost Basis:	Estimated salvage and reclamation..... 225,000
\$0.7875.	Total deductions..... 225,000
	Net requirements..... 675,000
	Total cost of net requirements..... \$531,562.50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS :  
Based on an estimated life of 1 year per pair leggins per man.  
Authority: Gen. Wood, 7/29/1918.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 25 per cent of maintenance. Authority: Gen. Wood..

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation: Item name: Leggins, canvas, mounted.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	200 per 1,000 men per year.....	100,000

Deductions:			
Cost BASIS: \$1. 6875.	Estimated salvage and reclamation.....		25,000
	Total deductions.....		25,000
	Net requirements.....		75,000
	Total cost of net requirements.....		\$126,562. 50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 1 year per pair per man. Authority: Gen. Wood, 8/1/18.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 25 per cent of maintenance. Authority: Gen. Wood.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Mackinaws.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	26 per 1,000 men per year.....	13,000

Deductions:			
Cost BASIS: \$10. 50.	Estimated salvage and reclamation.....		10,400
	Total deductions.....		10,400
	Net requirements.....		2,600
	Total cost of net requirements.....		\$27,300. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 1 year per Mackinaw per man. Seasonable article used 7 months in year. Authority: Gen. Wood.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 80 per cent of maintenance. Authority: Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Mittens, canton flannel, L. P.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2,700 per 1,000 men per year.....	1,350,000

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	337,500
\$0.375.	Total deductions.....	337,500
	Net requirements.....	1,012,500
	Total cost of net requirements.....	\$379,687.50

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 4 months per pair per man.

Authority: Gen. Wood, 5/1/18.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 25 per cent of maintenance. Authority: Gen. Wood.

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Mittens, white canvas, heavy.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	7.5 per 1,000 men per year.....	3,750

Total requirements..... 3,750

## Deductions:

COST BASIS:	Net requirements.....	3,750
\$0.17½.	Total cost of net requirements.....	\$646.88

\* "Working basis" is the quantity required per man or per unit for stated period ; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 1.25 per 1,000 men; estimated life, 2 months. Based on previous experience.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Mufflers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	44 per 1,000 men per year . . . . .	22,000

Total requirements . . . . . 22,000

Deductions:

Cost BASIS: Net requirements . . . . . 22,000  
\$2.1375. Total cost of net requirements . . . . . \$47,025.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 43.88 per 1,000 men; estimated life, 5 months. Based on previous experience. Used only 5 months in year. Seasonable article.

**ESTIMATE FOR**

**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Overalls, one-piece suits.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	30 per 1,000 men per year . . . . .	15,000

Deductions:

Cost BASIS: Net requirements . . . . . 15,000  
\$1.875. Total cost of net requirements . . . . . \$28,125.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 4 months per suit per man. Authority: Gen. Wood, 5/16/18.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Overcoats.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	500 per 1,000 men per year.....	250, 000

## Deductions:

	Estimated salvage and reclamation.....	200, 000
COST BASIS:	Total deductions.....	200, 000
\$9.1275.	Net requirements.....	50, 000
	Total cost of net requirements .....	\$456, 375. 00

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 2 years per coat per man. Authority: Gen. Wood, 7/29/18.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 80 per cent of maintenance. Authority: Gen. Wood.

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Overshoes, Arctic.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	250 per 1,000 men per year.....	125, 000

## Deductions:

	Net requirements.....	125, 000
COST BASIS:	Total cost of net requirements .....	\$351, 562. 50
\$2.5125.		

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on estimated life of 1 month per pair per man. Used 5 months each year. Authority: Gen. Wood.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: (Previously purchased by Medical Department.) Item name: Pa-  
jamas, suits (one suit).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	500, 000	3,600 per 1,000. . . . .	72, 000

Total requirements. . . . .	72, 000
Deductions:	
Cost BASIS: Net requirements. . . . .	72, 000
\$0.72. Total cost of net requirements. . . . .	\$51, 840. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Raincoats, dismounted.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	500	950 per 1,000 men per year. . . . .	475, 000

Deductions:	
Estimated salvage and reclamation. . . . .	118, 750
Cost BASIS: Total deductions. . . . .	118, 750
\$3.9075. Net requirements. . . . .	356, 250
Total cost of net requirements. . . . .	\$1, 392, 046. 88

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 1 year per coat per man. Authority: Gen. Wood 9-18-1918.
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 25 per cent of maintenance. Authority: Gen. Wood.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Raincoats, mounted.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	50 per 1,000 men per year . . . . .	25, 000

Deductions:			
Cost Basis:	Estimated salvage and reclamation . . . . .		\$6, 250
\$4.875.	Total deductions . . . . .		6, 250
	Net requirements . . . . .		13, 750
	Total cost of net requirements . . . . .		91, 406. 25

\* " Working basis " is the quantity required per man or per unit for stated period ; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of one year per coat per man. Authority: Gen. Wood, 9-18-1918.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 25 per cent of maintenance. Authority: Gen. Wood.

QUARTERMASTER CORPS. CLOTHING AND EQUIPAGE DIVISION.

Item No. 252. Item name: Shirts, cotton. Appropriation: Clothing, camp, and garrison equipage.

Quartermaster Corps.....	\$187, 593. 75
Medical Department.....	31, 455. 00
Total.....	219, 048. 75

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Shirts, cotton.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	667 per 1,000 men per year.....	333, 500

Deductions:			
Cost Basis:	Estimated salvage and reclamation.....		83, 375
\$0.75.	Total deductions.....		83, 375
	Net requirements.....		250, 125
	Total cost of net requirements.....		\$187, 593. 75

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 6 months—per shirt per man. Used 4 months in year. Authority: Gen. Wood.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 25 per cent of maintenance. Authority: Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: (Previously purchased by Medical Department.)  
cotton.

Item name: Shirts,

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	1,800 for 25,000.....	36, 000
Total requirements.....			36, 000

## Deductions:

COST BASIS:	Net requirements.....	36, 000
\$0. 87375.	Total cost of net requirements.....	\$31, 455

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation:

Item name: Shirts, flannel.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2,668 per 1,000 men per year.....	1, 334, 000

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	1, 000, 500
\$2.625.	Total deductions.....	1, 000, 500
	Net requirements.....	333. 500
	Total cost of net requirements.....	\$875, 437. 50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Gen. Wood, July 29, 1918. During May to August some shirts, flannel, replaced by shirts, cotton.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 25 per cent of maintenance. Authority: Gen..Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

*Appropriation:**Item name:* Shoes, marching.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2,000 per 1,000 men per year.....	1, 000, 000

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	250, 000
\$3.4875.	Total deductions.....	250, 000
	Net requirements.....	750, 000
	Total cost of net requirements.....	\$2, 615, 625.00

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 6 months per pair shoes per man.

Authority: Gen. Wood.

## 4. GIVE METHOD OF ARRIVING SALVAGE AND RECLAMATION ESTIMATE:

Based on 25 per cent of maintenance. Authority: Gen. Wood.

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* (Previously purchased by Medical Department.)*Item name:* Slippers, pairs.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	150 for 25,000.....	3, 000

Total requirements..... 3, 000

## Deductions:

COST BASIS:	Net requirements.....	3, 000
\$0. 5475.	Total cost of net requirements.....	\$1, 642. 50

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Stockings, wool, heavy.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	5,142 per 1,000 men per year . . . . .	2, 571, 000

## Deductions:

COST BASIS:	Estimated salvage and reclamation . . . . .	1, 285, 500
\$0.4125.	Total deductions . . . . .	1, 285, 500
	Net requirements . . . . .	1, 285, 500
	Total cost of net requirements . . . . .	\$530, 268. 75

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 1 month per pair man, used 6 months in year.  
Authority: Maj. Devereux.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 50 per cent of maintenance. Authority: Gen. Wood.

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Stockings, wool, light.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	4,998 per 1,000 men, per year . . . . .	2, 499, 000

## Deductions:

COST BASIS:	Estimated salvage and reclamation . . . . .	1, 124, 550
\$0.2625.	Total deductions . . . . .	1, 124, 550
	Net requirements . . . . .	1, 374, 450
	Total cost of net requirements . . . . .	\$360, 793. 12

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimate life of 1 month per pair, per man. Used 6 months each year. Authority: Maj. Devereux. Seasonable article.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 45 per cent of maintenance. Authority: Gen. Wood.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Straps, hat service.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2,640 per 1,000 men per year.....	1, 320, 000
Total requirements.....			1, 320, 000

Deductions:			
COST BASIS:	Net requirements.....		1, 320, 000
\$0.06.	Total cost of net requirements.....		\$79, 200

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 1,000 per 1,000 men; estimated life 4½ months. Based on previous experience.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

(Previously purchased by Medical Department.)

*Appropriation:**Item name:* Suits, convalescent, one.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	600 for 25,000.....	12, 000
Total requirements.....			12, 000

Deductions:			
COST BASIS:	Net requirements.....		12, 000
\$4.684	Total cost of net requirements.....		\$56, 208. 00

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimate based on experience.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation:

Item name: Trousers, cotton.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1,800 per 1,000 men per yard.....	900,000

Deductions:

COST BASIS:	Estimated salvage and reclamation.....	360,000
\$1.575	Total deductions.....	360,000
	Net requirements.....	540,000
	Total cost of net requirements.....	\$850,500.00

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimate life of 3 months per pair per man used 5 months in year.  
Authority: Gen. Wood, 7/29/1918.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 40 per cent of maintenance. Authority: Gen. Wood.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation:

Item name: Trousers, denim.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1,000 per 1,000 men per year.....	500,000

Deductions:

COST BASIS:	Estimated salvage and reclamation.....	250,000
\$1.1625	Total deductions.....	250,000
	Net requirements.....	250,000
	Total cost of net requirements.....	\$290,625.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 1 year per pair per man.  
Authority: Gen. Wood, 7-29-1918.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 50 per cent of maintenance.  
Authority: Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

*Appropriation:**Item name:* Trousers, white duck.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	130.5 per 1,000 men per year.....	65, 250

Deductions:

<b>COST BASIS:</b>	Net requirements.....	65, 250
\$1. 2575	Total cost of net requirements.....	\$80, 746. 88

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on estimated life of 4 months per trouser per man. Estimated number of men who will wear trousers, 21,750.

## ESTIMATE FOR

# EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Trousers, wool, O. D.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1,300 per 1,000 men per year.....	900, 000

Deductions:

<b>COST BASIS:</b>	Estimated salvage and reclamation.....	675, 000
\$5.025.	Total deductions.....	675, 000
	Net requirements.....	225, 000
	Total cost of net requirements.....	\$1, 130, 625

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 4 months per pair per man. Used 7 months in year. Authority: Gen. Wood, 7-29-1918.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 75 per cent of maintenance. Authority: Gen. Wood.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Undershirts, cotton.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	3,000 per 1,000 men per year.....	1, 500, 000

Deductions:

COST BASIS:	Estimated salvage and reclamation.....	375, 000
\$0.45.	Total deductions.....	375, 000
	Net requirements.....	1, 125, 000
	Total cost of net requirements.....	\$506, 250

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 2 months per shirt per man, used 6 months per year. Authority: Gen. Wood, 7-29-1918.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 25 per cent of maintenance. Authority: Maj. Devereux.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation: Item name: Undershirts, wool.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2,000 per 1,000 men per year.....	1, 000, 000

Deductions:

COST BASIS:	Estimated salvage and reclamation.....	250, 000
\$1.50.	Total deductions.....	250, 000
	Net requirements.....	750, 000
	Total cost of net requirements.....	\$1, 125, 000

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 3 months per undershirt per man. Used 6 months in year. Authority: Gen. Wood, 7-29-1918.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATES:  
Based on 25 per cent of maintenance.  
Authority: Gen. Wood.

## QUARTERMASTER CORPS.

Item No. 252d. Item name: Repairing clothing. Appropriation: Clothing, camp, and garrison equipage.

## SUMMARY.

Repairing shoes.....	\$2, 070, 000. 00
Repairing overcoats.....	149, 000. 00
Repairing coats, wool.....	200, 000. 00
Repairing breeches, wool.....	604, 000. 00
Repairing shirts, wool and cotton.....	675, 000. 00
Repairing coats, cotton.....	337, 000. 00
Repairing breeches, cotton.....	406, 000. 00
Repairing hats.....	240, 000. 00
Repairing blankets.....	138, 000. 00
Repairing socks, wool.....	25, 000. 00
Repairing undershirts, wool and cotton.....	157, 000. 00
Repairing drawers, wool and cotton.....	309, 000. 00
Repair sweaters.....	54, 150. 00
Repairing coats, denim.....	25, 000. 00
Repairing trousers.....	25, 000. 00
Repairing slickers.....	240, 000. 00
Repairing leggings.....	75, 000. 00
Total.....	5, 729, 150. 00

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing shoes.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	3.....	1, 500, 000

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	\$2, 070, 000. 00
\$1.38.	Total cost of net requirements.....	\$2, 070, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based upon average annual issue of shoes for fiscal year 1914 and 1915 of 3.76 pairs, and fiscal year 1916 and 1917 of 7.5 pairs per man.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

## Items of cost:

Top lift.....	\$0. 20
Soles.....	. 50
Heels.....	. 20
Findings.....	. 20
Labor.....	. 28

1. 38

Date, 11-27-18. Checked by MAN. Estimates made by RJB.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item N . 252d.

SALVAGE DIVISION.

Appropriation: Item name: Repairing overcoats.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	(0.5).....	250, 000

Deductions:

COST BASIS:	Estimated salvage and reclamation.....	\$149, 000. 00
\$0.596.	Total cost of net requirements.....	149, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based upon average annual issue of overcoats for fiscal year 1914 and 1915 of 0.398 per man and fiscal year 1916 and 1917 of 1 per man.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.  
Date, 11-27-18. (checked by MAN. Estimate made by RJB.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation: Item name: Repairing coats, wool.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	(1) .....	500, 000

Deductions:

COST BASIS:	Estimated salvage and reclamation.....	\$200, 000. 00
\$0.40.	Total cost of net requirements.....	200, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based upon average annual issue of coats, wool, for fiscal year 1914 and 1915 of 0.69 per man and fiscal year 1916 and 1917 of 2.21 per man.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.  
Date, 11-27-18. Checked by MAN. Estimate made by RJB.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing breeches, wool.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	2.....	1, 000, 000

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	\$604, 000. 00
\$0.604	Total cost of net requirements.....	604, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based upon average issue of breeches, wool, for fiscal year 1914 and 1915 of 1.18 per man and fiscal year 1916 and 1917 of 3.18 per man.

## 2. STATE THE SOURCE OF METHOD OF DETERMINING COST BASIS:

From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.

Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing shirts, wool and cotton.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	3.....	1, 500, 000

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	\$675, 000
\$0.45	Total cost of net requirements.....	675, 000

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

From records of turn-ins in all camps and stations in United States during August, September, and October, 1918.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.

Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation: Item name: Repairing coats, cotton.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	2.....	1, 000, 000

Deductions:

COST BASIS:	Estimated salvage and reclamation.....	\$337, 000. 00
\$0.337.	Total cost of net requirements.....	337, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
From records of turn-ins in all camps and stations in United States during August, September, and October, 1918.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
From shop records from Fort Sam Houston for August, September, and October, 1918, using civilian personnel.
- Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation: Item name: Repairing breeches, cotton.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	2.....	1, 000, 000

Deductions:

COST BASIS:	Estimated salvage and reclamation.....	\$406, 000. 00
\$0.406.	Total cost of net requirements.....	406, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based upon average issue of breeches, cotton, for fiscal years 1914 and 1915, of 2.4 per man; and for fiscal years 1916 and 1917, of 5.95 per man.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.
- Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing hats.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	2.....	1,000,000

Deductions:

Cost Basis: Estimated salvage and reclamation..... \$240,000.00  
 \$0.24 Total cost of net requirements..... 240,000.00

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based upon average annual issue of hats for fiscal year 1914 and 1915 of 1.25 per man, and for fiscal year 1916 and 1917 of 3.85 per man.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From shop records of Philadelphia depot for August, September, and October, 1918, using civilian personnel.

Date, 11-27-18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing blankets.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	2.....	1,000,000

Deductions:

Cost Basis: Estimated salvage and reclamation..... \$138,000.00  
 \$0.138 Total cost of net requirements..... 138,000.00

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

## 1. State the method and authority for arriving at the working basis:

From records of turn-ins in all camps and stations in United States during August, September, and October, 1918.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.

Date, 11-27-18. Checked by M. A. N. Estimate made by R. J. B.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing socks, wool.

Initial equipment.	Strength.	Working basis. *	Requirements.
Maintenance.....	500, 000	1.....	500, 000

Deductions:

COST BASIS: Estimated salvage and reclamation..... \$25, 000. 00  
\$0.05. Total cost of net requirements..... 25, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based upon average annual issue of socks, wool, for fiscal year 1914 and 1915 of 12.8 pairs per man, and for fiscal year 1916 and 1917 of 14.7 pairs per man.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Records of Government shops.

Date: 11-27-18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing undershirts, wool and cotton.

Initial equipment.	Strength.	Working basis. *	Requirements.
Maintenance.....	500, 000	2.....	1, 000, 000

Deductions:

COST BASIS: Estimated salvage and reclamation..... \$157, 000. 00  
\$0.157. Total cost of net requirements..... 157, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based upon annual average issue of undershirts, wool, for fiscal year 1914 and 1915 of 1.51 per man, and for fiscal year 1916 and 1917 of 3.86 per man. For undershirts, cotton, fiscal year 1914-15, 0.751 per man; for fiscal year 1916-17, 13.52 per man.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.

Date: 11-27-18. Checked by M. A. N. Estimated made by R. J. B.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d

SALVAGE DIVISION.

Appropriation: Item name: Repairing drawers, wool and cotton.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance. ....	500, 000	3.....	1, 500, 000

Deductions:			
COST BASIS:	Estimated salvage and reclamation.....		\$309, 000. 00
\$0.296.	Total cost of net requirements.....		309, 000. 00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- Based upon annual average issue of drawers, wool, for fiscal year 1914 and 1915 of 1.22 per man, and for fiscal year 1916 and 1917 of 10.2 per man. For drawers, cotton, fiscal year 1914–15, 0.08, and for fiscal year 1916–17, 10.75 per man.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian employees.
- Date 11-27-18. Checked by Man. Estimate made by R. J. B.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d

SALVAGE DIVISION.

Appropriation: Item name: Repair, sweaters.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance. ....	500, 000	0.15.....	75, 000

Deductions:			
COST BASIS:	Estimated salvage and reclamation.....		\$54, 150. 00
\$0.722.	Total cost of net requirements.....		54, 150. 00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- From records of turn-ins in all camps and stations in United States during August, September, and October, 1918.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.
- Date, 11/27/18. Checked by Man. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing coats, denim.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	$\frac{1}{2}$ . . . . .	250,000

## Deductions:

COST BASIS:	Estimated salvage and reclamation . . . . .	\$25,000.00
\$0.10.	Total cost of net requirements . . . . .	25,000.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

From records of turn-ins in all camps and stations in United States during August, September, and October, 1918.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.

Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing trousers, denim.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	$\frac{1}{2}$ . . . . .	250,000

## Deductions:

COST BASIS:	Estimated salvage and reclamation . . . . .	\$25,000.00
\$0.10.	Total cost of net requirements . . . . .	25,000.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

From records of turn-ins in all camps and stations in United States during August, September, and October, 1918.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.

Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing slickers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	0.5 . . . . .	250, 000

Deductions:

Cost BASIS: Estimated salvage and reclamation . . . . . \$240, 000. 00  
 \$0.96. Total cost of net requirements . . . . . 240, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based upon annual issue for fiscal year 1914-15 of 160 per 1,000 men and for fiscal year 1916-17 of 470 per 1,000 men.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Based upon expert advice.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

Date, 11-27-18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 252d.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing leggins.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	1 . . . . .	500, 000

Deductions:

Cost BASIS: Estimated salvage and reclamation . . . . . \$75, 000. 00  
 \$0.15. Total cost of net requirements . . . . . 75, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

From records of turn-ins in all camps and stations in United States during August, September, and October, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From shop records of Fort Sam Houston for August, September, and October 1918, using civilian personnel.

Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 254.

SALVAGE DIVISION.

*Appropriation:**Item name:* Altering clothing.

## 5. REMARKS:

No appropriation desired under this item. Item 252d, salvage of clothing and  
equipment cares for this item.

Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

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ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 255A.

SALVAGE DIVISION.

*Appropriation:**Item name:* Propaganda.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 256.

SALVAGE DIVISION.

*Appropriation:**Item name:* Washing clothing.

## 5. REMARKS:

No appropriation desired under this item. Item 134, operation of laundries,  
covers this item.

Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

## QUARTERMASTER CORPS.

Item No. 257. Item name: Dry cleaning. Appropriation: Clothing, camp and garrison equipage.

## SUMMARY.

Overcoats, dry cleaned.....	\$485,000.00
Coats, wool, dry cleaned.....	250,000.00
Breeches, dry cleaned.....	400,000.00
Sweaters, dry cleaned.....	13,500.00
<b>Total.....</b>	<b>1,148,500.00</b>

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 257.

## SALVAGE DIVISION.

*Appropriation:**Item name: Overcoats, dry cleaned.*

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	1.....	500,000

## Deductions:

<b>COST BASIS:</b>	Estimated salvage and reclamation.....	\$485,000.00
<b>\$0.97.</b>	Total cost of net requirements.....	485,000.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Records and reports of frequency in American camps.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Average price of contracts from six cantonments and four posts during 1918.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Prices taken from contracts in following camps: Funston, Jackson, Pike, MacArthur, Greene, Beauregard, Columbus Barracks, Jefferson Barracks, Fort Benjamin Harrison, Fort McPherson.

Date, 11-27-18. Checked by MAN. Estimate made by RJB.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 257.

SALVAGE DIVISION.

Appropriation: Item name: Coats, wool, dry cleaned.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	1.....	500,000

Deductions:

COST BASIS:	Estimated salvage and reclamation.....	\$250,000.00
\$0.50.	Total cost of net requirements.....	250,000.00

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Records and reports of frequency in American camps.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average price of contracts from six cantonments and four posts during 1918.
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Prices taken from contracts in following camps: Funston, Jackson, Pike, MacArthur, Greene, Beauregard, Columbus Barracks, Jefferson Barracks, Fort Benjamin Harrison, Fort McPherson.

Date, 11-27-18. Checked by MAN. Estimate made by RJB.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 257.

SALVAGE DIVISION.

*Appropriation:**Item name:* Breeches, dry cleaning.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	2.....	1, 000, 000

**Deductions:**

<b>COST BASIS:</b>	Estimated salvage and reclamation.....	\$400, 000. 00
\$0.40.	Total cost of net requirements.....	400, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Records and reports of frequency in American camps.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Average price of contracts from six cantonments and four posts during 1918.

**4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:**

Prices taken from contracts in following camps: Funston, Jackson, Pike, MacArthur, Greene, Beauregard, Columbus Barracks, Jefferson Barracks, Fort Benjamin Harrison, Fort McPherson.

Date, 11-27-18. Checked by MAN. Estimate made by RJB.



**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 257.

SALVAGE DIVISION.

Appropriation:

Item name: Sweaters, dry cleaned.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500, 000	1.....	50, 000

## Deductions:

COST BASIS:	Estimated salvage and reclamation.....	\$13, 500. 00
\$0.27.	Total cost of net requirements.....	13, 500. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Records and reports of frequency in American camps.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Average price of contracts from six cantonments and four posts during 1918.

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Prices taken from contracts in following camps: Funston, Jackson, Pike, MacArthur, Greene, Beauregard, Columbus Barracks, Jefferson Barracks, Fort Benjamin Harrison, Fort McPherson.

Date, 11-27-18. Checked by MAN. Estimate made by RJB.

QUARTERMASTER CORPS.

Item No. 258. Item name: Repairing equipage. Appropriation: Clothing, camp and garrison equipage.

Summary.

Repair sacks, bed.....	\$221,000.00
Repair tents, wall, large.....	529.05
Repair tents, wall, small.....	9,469.00
Repair tents, pyramidal.....	49,140.00
Repair tents, shelter halves.....	150,000.00
Repair screens, latrine.....	16,708.50
Repair paulins.....	129,960.00
Repair cots, canvas.....	25,000.00
Repair bags, barrack.....	32,550.00
Total.....	634,356.55

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

SALVAGE DIVISION.

Appropriation: Item name: Repairing bed sacks.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	1.....	500,000

Deductions:	
Cost BASIS: Estimated salvage and reclamation.....	\$221,000
\$0.442. Total cost of net requirements.....	221,000

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS.  
From records of turn-ins in all camps and stations in United States during August, September, and October, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.

Date 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

SALVAGE DIVISION.

Appropriation:

Item name: Repair tents, large, wall.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500, 000	Estimated .....	50

## Deductions:

COST BASIS:	Estimated salvage and reclamation .....	\$529.05
\$10.581 per unit per year.	Total cost of net requirements .....	529.05

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based upon average annual issue for fiscal years 1914 and 1915 of 1.92 per 1,000; men and fiscal years 1916 and 1917 of 14.3 per 1,000 men, making due allowance for semipermanent camps, cantonment construction.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Cost based upon following: \$63.49 (price) by  $\frac{1}{4}$  (factor of cost) by 1 (frequency of repair)=\$10.581.

Date \_\_\_\_\_. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

SALVAGE DIVISION.

Appropriation:

Item name: Repair, tents, wall, small.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500, 000	Estimated .....	1, 700

## Deductions:

COST BASIS:	Estimated salvage and reclamation .....	\$9, 469
\$5.57 per unit per year.	Total cost of net requirements .....	9, 469

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based upon average annual issue for fiscal year 1916-17 of 34 per 1,000 men, making due allowance for semipermanent camps, cantonment construction.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Cost based upon following: \$33.44 (price) by  $\frac{1}{4}$  (factor of cost) by 1 (frequency of repair per year)=\$5.57.

Date, 11-27-18. Checked by M. A. N. Estimate made by R. J. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

SALVAGE DIVISION.

Appropriation: Item name: Repair, tents, pyramidal.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance: . . . . .	500, 000	Estimated . . . . .	6, 000

Deductions:  
Cost Basis: Estimated salvage and reclamation . . . . . \$49, 140  
\$8.19 per unit Total cost of net requirements . . . . . 49, 140  
per year.

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based upon annual issue for fiscal year 1914-15 of 61.1 per 1,000 men and for fiscal year 1916-17 of 380 per 1,000 men, making due allowance for semi permanent camps, cantonment construction.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Cost based upon following: \$49.18 (price) by  $\frac{1}{6}$  (factor of cost) by 1 (frequency of repair per year)=\$8.19.
- Date . . . . . Checked by M. A. N. Estimate made by R. J. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

SALVAGE DIVISION.

Appropriation: Item name: Repair tents, shelter halves.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	1	500, 000

Deductions:  
Cost Basis: Estimated salvage and reclamation . . . . . \$150, 000  
\$0.30 each per Total cost of net requirements . . . . . 150, 000  
year.

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based upon annual issue for fiscal year 1914-15 of 270 per 1,000 men and for fiscal year 1916-17 of 1,493 per 1,000 men.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
\$1.81 (price) by  $\frac{1}{6}$  (factor of original cost) by 1 (frequency of repair per year) = \$0.30.
- Date 11-27-18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

SALVAGE DIVISION.

Appropriation:

Item name: Repair, screens, latrine.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500,000	10.575 per 1.000 men .....	5287.5

## Deductions:

Cost BASIS: Estimated salvage and reclamation ..... \$16,708.50  
 \$3.16. Total cost of net requirements ..... 16,708.50

\*"Working basis" is the quantity required per man or per unit for stated period;  
 or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based upon table of organization.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

\$19 (price) by 1/6 (factor of cost) by 1 (frequency of repair per year) = \$3.16.

Date. 11-27-18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

SALVAGE DIVISION.

Appropriation:

Item name: Repair, paulins.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	18 divs.	1,444 per div .....	25,992

## Deductions:

Cost BASIS: Estimated salvage and reclamation ..... \$129,960  
 \$5 per unit per year. Total cost of net requirements ..... 129,960

\*"Working basis" is the quantity required per man or per unit for stated period,  
 or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Tables of organization and fundamental allowances.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

\$20 (price) by 25 per cent (cost of repair) = \$5.

Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

SALVAGE DIVISION.

Appropriation:

Item name: Cots, canvas, repair.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	50, 000	1/2 unit per year per man.....	25, 000

Deductions:

Cost BASIS: Estimated salvage and reclamation..... \$25, 000  
 \$1. Total cost of net requirements..... 25, 000

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on figures from camps.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Based on above repair shops reports.

Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

SALVAGE DIVISION.

Appropriation:

Item name: Repairing, bags, barrack.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.1.....	50, 000

Deductions:

Cost BASIS: Estimated salvage and reclamation..... \$32, 550  
 \$0.651. Total cost of net requirements..... 32, 550

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

From records of turn-ins in all camps and stations in United States during August, September, and October, 1918.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From shop records of Fort Sam Houston for August, September, and October, 1918, using civilian personnel.

Date, 11/27/18. Checked by M. A. N. Estimate made by R. J. B.

## QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 258. Item name: Equipage. Appropriation: Clothing, camp and garrison equipage.

Item.	Equipment, Army 500,000.	Amount required.
Bags, barrack	\$109,125 00	
Bags, carpenters'	20.30	
Bags, coal, 2-bushel	270.00	
Bags, harnessmakers, small store	13.05	
Bags, horseshoe nail, 3-pound size	17.40	
Bags, laundry, one	698.40	
Bags, nail, 10-pound size	52.20	
Bags, water sterilizing and covers	22,680.00	
Bars, mosquito	1,075,815.00	
Bedsacks	127,710.00	
Blankets	428,022.50	
Buckets, canvas	42.00	
Cincha	30.48	
Covers, camp and staff	2,088.55	\$2,088.55
Covers, mattress	780,000.00	
Dubbing for shoes	67,500.00	
Flags, chaplain	182.25	
Flags, distinguishing ammunition and staff	1,274.40	
Flags, distinguishing Artillery brigade and staff	136.08	
Flags, distinguishing Infantry brigade and staff	297.77	
Flags, distinguishing Infantry division and staff	145.26	
Flags, distinguishing post office and staff	509.63	
Flags, distinguishing Red Cross and halyard	1,091.14	
Flags, distinguishing supply and staff	608.63	
Flags, distinguishing telegraph and staff	774.63	
Flags, distinguishing, for veterinary units (mobile section, hospital and base hospital)	212.16	
Flags, national storm and halyard	3,984.00	
Flies, tents, hospital, tropical		
Flies, tents, storage		
Flies, tents, wall, large		
Flies, tents, wall, small		
Guidons, Cavalry service, with case and staff	232.25	
Guidons, Engineer, mounted company service, with case and staff	33.08	
Guidons, Field Artillery, service, with case and staff	913.68	
Guidons, Signal Corps, service, with case and staff	132.09	
Hoods, G. I., for tents, pyramidal		
Mattresses, cotton	9,450.00	9,450.00
Mattress covers	2,880.00	2,880.00
Ornaments (collar)	13,125.00	13,125.00
Pads, cotton, felt, for metal cots	6,300.00	6,300.00
Paulins, 17 by 30	168,165.00	168,165.00
Pennants, Quartermaster	66.60	
Pillows	2,736.00	
Pillowcases, cotton	32,013.00	
Pillow sacks	982.80	
Pins, tent, large		
Pins, tent, shelter	82,162.50	
Pins, tent, small		
Poles, ridge, for tents, hospital, tropical		
Poles, screens, latrine		
Poles, tent, hospital, tropical, upright		
Poles, tent, hospital, tropical, wall		
Poles, tent, hospital, ward, upright		
Poles, tent, hospital, ward, wall		
Poles, tent, pyramidal		
Poles, tent, shelter	52,397.25	
Poles, tent, storage, ridge		
Poles, tent, storage, upright		
Poles, tent, storage, wall		
Poles, tent, wall, large, ridge		
Poles, tent, wall, large, upright		
Poles, tent, wall, small, ridge		
Poles, tent, wall, small, upright		
Rolls, canvas	504.00	
Rolls, canvas, carpenters'	43.50	
Rolls, canvas, harnessmakers'	39.15	
Rolls, canvas, horseshoeing	53.65	
Saddle, engineer pack	3,528.00	
Screens, latrine		
Shirts, cotton	125,730.00	125,730.00
Shields, tent		
Stretchers, shoe	159.98	
Tape, for identification tags	1,541.25	
Tents, hospital, tropical		
Tents, hospital, ward		
Tents, pyramidal		

Item.	Equipment Army 500,000.	Amount required.
Tents, shelter, halves.....	\$613,080.00	.....
Tents, storage.....		.....
Tents, wall, large.....		.....
Tents, wall, small.....		.....
Thread, cotton, assorted (spools).....	540.00	\$540.00
Thread, harness, 2-ounce balls.....	21.60	.....
Thread, heavy linen, No. 25, 200 yards in spool.....	51.38	.....
Thread, linen, unbleached, 200 yards in spool.....	153.90	.....
Total.....	3,740,336.49	329,274.55

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:                      Item name: Bags, barrack.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	500 per 1,000 men per year.....	250,000

Deductions:		
COST BASIS:	Estimated salvage and reclamation.....	100,000
\$0.72½.	Total deductions.....	100,000
	Net requirements.....	150,000
	Total cost of net requirements.....	\$109,125

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 2 years per bag per man.  
Authority: Gen. Wood, 7-29-18.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:  
Based on 40 per cent of maintenance. Authority: Gen. Wood.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Bags, carpenters.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.058 per 1,000 men per year.....	29

Total requirements..... 29

Deductions:	
COST BASIS:      Net requirements.....	29
\$0.70.            Total cost of net requirements.....	\$20.30

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 144 bags as initial equipment for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Bags, coal, 2-bushel.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.12 per 1,000 men per year.....	60

Total requirements..... 60

Deductions:	
COST BASIS:      Net requirements.....	60
\$4.50.            Total cost of net requirements.....	\$270

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 302 bags as initial equipment for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Bags, harness makers',  
small stores.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.058 per 1,000 men per year.....	29

Total requirements..... 29

Deductions: .

Cost Basis:	Net requirements.....	29
\$0.45.	Total cost of net requirements.....	\$13.05

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 144 bags as initial equipment for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Bags, horseshoe nail,  
3-pound size.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.058 per 1,000 men per year.....	29

Total requirements..... 29

**Deductions:**

Cost Basis: Net requirements..... 29  
\$0.60. Total cost of net requirements..... \$17. 40

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 144 bags as initial equipment for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* (Previously purchased by Medical Department.) *Item name:* Bags,  
laundry (one).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	48 per 25,000.....	960

Total requirements..... 960

**Deductions:**

Cost Basis: Net requirements..... 960  
\$0.7275. Total cost of net requirements..... \$698. 40

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Bags, mail, 10-pound size.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	116 per 1,000 men per year.....	58
Total requirements.....			58

Deductions:			
COST BASIS:	Net requirements.....		58
\$0.90.	Total cost of net requirements.....		\$52.20

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 228 bags as initial equipment for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Bags, water sterilizing, and covers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	18 per 1,000 men per year.....	9,000

Deductions:			
COST BASIS:	Net requirements.....		9,000
\$2.52.	Total cost of net requirements.....		\$22,680

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued 1.5 per month per 1,000 men. Estimated life 7 months per bag per man.

Authority: Gen. Wood.

QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 258. Item name: Bars, mosquito. Appropriation: Clothing, camp, and garrison equipage.

Quartermaster Corps.....	\$1, 030, 500. 00
Medical Department.....	45, 315. 00
Total.....	1, 075, 815. 00

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Bars, mosquito, single.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1,200 per 1,000 men per year.....	600, 000

Total requirements..... 600, 000

Deductions:

Cost Basis:	Net requirements.....	600, 000
\$1.7175.	Total cost of requirements.....	\$1, 030, 500. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1,200 issued to each 1,000 men each per year: estimated life, 5 months. Used 6 months in year; seasonable articles.  
Based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Previously purchased by the Medical Department. *Item name:*  
Bars, mosquito, single (one).

CLOTHING AND EQUIPAGE DIVISION.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	600 for 25,000 . . . . .	12, 000

Total requirements . . . . . 12, 000

Deductions:  
Cost Basis: Net requirements . . . . . 12, 000  
\$3.77625. Total cost of net requirements . . . . . \$45, 315. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 258. Item name: Bed sacks. Appropriation: Clothing, camp and garrison equipage.

Quartermaster Corps.....	\$123,750
Medical Department.....	3,960
Total.....	127,710

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Bed sacks.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	500 per 1,000 men per year.....	250,000

Deductions:	
Estimated salvage and reclamation.....	100,000
Total deductions.....	100,000
Net requirements.....	150,000
Total cost of net requirements.....	\$123,750

COST BASIS:  
\$0.825.

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 2 years per bed sack per man.  
Authority: Gen. Wood, 7/29/18.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 40 per cent of maintenance. Authority: Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* (Previously purchased by Medical Department). *Item name:*  
Bed sacks (one).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	240 for 25,000.....	4,800

Total requirements..... 4,800

## Deductions:

Cost Basis: Net requirements..... 4,800  
\$0.825. Total cost of net requirements..... \$3,960

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.



## QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 258. Item name: Blankets. Appropriation: Clothing, camp, and garrison equipage.

Quartermaster Corps.....	\$375,000.00
Medical Department.....	52,515.00
Engineers.....	507.50
<b>Total.....</b>	<b>428,022.50</b>

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Blankets, 4-pound.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	500 per 1,000 men per year.....	250,000

## Deductions:

	Estimated salvage and reclamation.....	187,500
<b>COST BASIS:</b>	<b>Total deductions.....</b>	<b>187,500</b>
<b>\$6.00.</b>	<b>Net requirements.....</b>	<b>62,500</b>
	<b>Total cost of net requirements.....</b>	<b>\$375,000.00</b>

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 7 months per blanket per man. Authority: Gen. Wood, 7/29/18.

## 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Based on 75 per cent of maintenance. Authority: Gen. Wood.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Item name:* Blankets, gray (one).*Appropriation:* (Previously purchased  
by Medical Department.)

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	600, 000	600 for 25,000.....	12, 000

Total requirements..... 12, 000

Deductions:

COST BASIS: Net requirements..... 12, 000  
\$4.37625. Total cost of net requirements..... \$52, 515. 00

\* "Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Formerly procured by Engineers.*Item name:* Blankets, rubber.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.7 per 1,000 men per year.....	350

Total requirements..... 350

Deductions:

COST BASIS: Net requirements..... 350  
\$1.45. Total cost of net requirements..... \$507. 50

\* "Working basis" is the quantity required per man or per unit for stated period  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 350 blankets, as initial supply for Engr. Tr. of 500,000 men. Estimated  
one year's supply.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Buckets, canvas.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.14 per 1,000 men per year.....	70

Total requirements..... 70

Deductions:  
Cost Basis:      Net requirements..... 70  
\$0.60.      Total cost of net requirements..... \$42.00

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 352 buckets, initial supply for Engineers Tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Cincha.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.012 per 1,000 men per year.....	6

Total requirements..... 6

## Deductions:

Cost BASIS: Net requirements..... 6  
\$5.08. Total cost of net requirements..... \$30.48

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 30 cincha, initial supply for Engr. Tr. of 500,000 men. Estimated life of equipment 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Colors, camp and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1.3812 per 1,000 men per year.....	691

Total requirements..... 691

## Deductions:

Cost BASIS: Net requirements..... 691  
\$3.0225. Total cost of net requirements..... \$2,088.55

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 1.151 per 1,000 men; estimated life 10 months; based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Covers, mattress.

Initial equipment.	Strength.	Working basis. *	Requirements.
Maintenance.....	500	1,600 per 1,000 men per year.....	800, 000

Deductions:

Cost Basis:

\$0.975.

Total cost of net requirements, \$780, 000.

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

5. REMARKS:

This article is for sale to officers, and the cost price will eventually revert back to the Treasury through collections from sales.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Dubbing for shoes.

Initial equipment.	Strength.	Working basis. *	Requirements.
Maintenance.....	500	1,800 per 1,000 men per year.....	900, 000

Deductions:

Cost Basis:

\$0.075.

Net requirements..... 900, 000

Total cost of net requirements..... \$67, 500

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on an estimated life of 6 pounds per man per year. Authority: Gen. Wood, 4-30-18.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Flags, chaplain.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.6 per 1,000 men per year.....	300
Total requirements.....			300
Deductions:			
COST BASIS:	Net requirements.....		300
\$0.6075.	Total cost of net requirements.....		\$182.25

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 0.2 per 1,000 men; estimated life, 4 months, based on previous experience.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Flags, distinguishing ammunition and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.72 per 1,000 men per year.....	360
Total requirements.....			360
Deductions:			
COST BASIS:	Net requirements.....		360
\$3.54.	Total cost of net requirements.....		\$1,274.40

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 0.25 per 1,000 men; estimated life, 4 months, based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Flags, distinguishing Artillery brigade and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.072 per 1,000 men per year.....	36

Total requirements..... 36

Deductions:  
Cost Basis: Net requirements..... 36  
\$3.78. Total cost of net requirements..... \$136.08

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 0.025 per 1,000 men; estimated life 4 months; based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Flags, distinguishing Infantry brigade and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.156 per 1,000 men per year.....	78

Total requirements..... 78

Deductions:  
Cost Basis: Net requirements..... 78  
\$3.8175. Total cost of net requirements..... \$297.77

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 0.05 per 1,000 men; estimated life 4 months; based on previous experience.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Flags, distinguishing, Infantry division and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	0.072 per 1,000 men per year.....	36

Total requirements..... 36

Deductions:

COST BASIS: Net requirements..... 36  
 \$4.035. Total cost of net requirements..... \$145.26

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 0.025 per 1,000 men; estimated life, 4 months; based on previous experience.

**ESTIMATE FOR**

**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Flags, distinguishing, post office and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	0.3 per 1,000 men per year.....	150

Total requirements..... 150

Deductions:

COST BASIS: Net requirements..... 150  
 \$3.3975. Total cost of net requirements..... \$509.63

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 0.1 per 1,000 men; estimated life, 4 months; based on previous experience.



**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:*                      *Item name:* Flags, distinguishing, Red Cross, and halyard.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	0.53 per 1,000 men per year . . . . .	265

Total requirements . . . . . 265

**Deductions:**

**COST BASIS:**      Net requirements . . . . . 265  
\$4.1175.              Total cost of net requirements . . . . . \$1,091.14

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 0.175 per 1,000 men; estimated life, 4 months; based on previous experience.

**ESTIMATE FOR.**

**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriations:*                      *Item name:* Flags, distinguishing, supply, and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	0.3 per 1,000 men per year . . . . .	150

Total requirements . . . . . 150

**Deductions:**

**COST BASIS:**      Net requirements . . . . . 150  
\$4.0575.              Total cost of net requirements . . . . . \$608.63

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 0.1 per 1,000 men; estimated life, 4 months; based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Flags, distinguishing, telegraph and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	500	0.456 per 1,000 men per year. . . . .	228
Total requirements. . . . .			228
Deductions:			
Cost Basis: \$3.3975.	Net requirements. . . . .		228
	Total cost of net requirements. . . . .		\$774.63

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 0.15 per 1,000 men; estimated life, 4 months. Based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Flags, distinguishing, for veterinary units (mobile section; hospital and base hospital).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	500	0.24 per 1,000 men per year. . . . .	120
Total requirements. . . . .			120
Deductions:			
Cost Basis: \$1.768.	Net requirements. . . . .		120
	Total cost of net requirements. . . . .		\$212.16

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 0.0789 per 1,000 men; estimated life, 4 months. Authority: 9th Ind. A. G. O. 4/27/18.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Flags, national, storm, and halyard.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	0.83 per 1,000 men per year . . . . .	415

Total requirements . . . . .

415

Deductions:

Cost Basis: Net requirements . . . . . 415

\$9.60. Total cost of net requirements . . . . . \$3,984.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 0.275 per 1,000 men; estimated life 4 months. Based on previous experience.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Flies, tents, hospital, tropical.

Maintenance: All troops will be maintained in cantonments.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Flies, tents, storage.

Maintenance: All troops will be maintained in cantonments.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258.  
CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Flies, tent, wall, large.  
*Maintenance:* All troops will be maintained in cantonments.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258.  
CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Flies, tent, wall, small.  
*Maintenance:* All troops will be maintained in cantonments.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258.  
CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Guidons, Cavalry service with case and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0. 156 per 1,000 men per year.....	78

Total requirements.....78

Deductions:  
Cost Basis:      Net requirements..... 78  
\$2.9775.          Total cost of net requirements..... \$232. 25

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.  
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS.  
Issued on the basis of 0.1035 per 1,000 men; estimated life 8 months. Based previous experience.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Guidons, Engineer, mounted company service, with case and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	0.018 per 1,000 men per year .....	9

Total requirements..... 9

Deductions:

COST BASIS: Net requirements..... 9  
\$3.675. Total cost of net requirements..... \$33.08

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 0.012 per 1,000 men; estimated life, 8 months; based on previous experience.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Guidons, Field Artillery, service, with case and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	0.564 per 1,000 men per year .....	282

Total requirements..... 282

Deductions:

COST BASIS: Net requirements..... 282  
\$3.24. Total cost of net requirements..... \$913.68

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 0.375 per 1,000 men; estimated life, 8 months; based on previous experience.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Guidons, Signal Corps, service with case and staff.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	0.075 per 1,000 men per year . . . . .	37

Total requirements . . . . . 37

Deductions:

Cost BASIS: Net requirements . . . . . 37  
 \$3.57. Total cost of net requirements . . . . . \$132.09

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 0.05 per 1,000 men; estimated life, 8 months: based on previous experiences.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Hoods, G. I., for tents, pyramidal.

Maintenance: All troops will be maintained in cantonments.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Felt (previously purchased by Medical Department). *Item name:*  
Mattresses, cotton, one.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500, 000	60 for 25,000.....	1, 200

Total requirements..... 1, 200

Deductions:

**COST BASIS:** Net requirements..... 1, 200  
\$7.875. Total cost of net requirements..... \$9, 450. 00

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* (Previously purchased by Medical Department.) *Item name:* Mat-  
tress covers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500, 000	120 for 25,000.....	2, 400

Total requirements..... 2, 400

Deductions:

**COST BASIS:** Net requirements..... 2, 400  
\$1. 20. Total cost of net requirements..... \$2, 880. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Ornament (collar).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1,000 per 1,000 men per year.....	500, 000

Deductions:		
Cost Basis:	Net requirements.....	500, 000
\$0. 02625.	Total cost of net requirements.....	\$13, 125. 00

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of one year per ornament per man.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: (Previously purchased by Medical Department.) Item name: Pads  
cotton, felt, for metal cots. One.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	120 for 25,000.....	2, 400

Total requirements..... 2, 400

Deductions:		
Cost Basis:	Net requirements.....	2, 400
\$2. 625.	Total cost of net requirements.....	\$6, 300. 00

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Paulins, 17 by 30.

Initial equipment.	Strength.	Working basis.*	Requirements
Maintenance.....	500	8 per 1,000 men per year.....	4,000

Deductions:			
Cost Basis:	Estimated salvage and reclamation.....		1,000
\$56.055	Net requirements.....		3,000
	Total cost of net requirements.....		\$168,165.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 10 months per paulin per man. Authority: Gen. Wood.
4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Based on 25 per cent of maintenance. Authority: Gen. Wood.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Pennants, Q. M.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.06 per 1,000 men per year.....	30

Total requirements..... 30

Deductions:			
Cost Basis:	Net requirements.....		30
\$2.22	Total cost of net requirements.....		\$66.60

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 0.0575 per 1,000 men; estimated life, 10 months; based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: (Previously purchased by Medical Department.) Item name:  
Pillows.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	120 for 25,000.....	2,400

Total requirements..... 2,400

Deductions:  
Cost Basis: Net requirements..... 2,400  
\$1.14. Total cost of net requirements..... \$2,736

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: (Previously purchased by Medical Department.) Item name:  
Pillow cases, cotton.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	6,000 for 25,000.....	120,000

Total requirements..... 120,000

Deductions:  
Cost Basis: Net requirements..... 120,000  
\$0.266775. Total cost of net requirements..... \$32,013

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: (Previously purchased by Medical Department.)

Item name: Pillow sacks, one.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	240 for 25,000 . . . . .	4, 800

Total requirements . . . . . 4, 800

Deductions:

Cost BASIS: Net requirements . . . . . 4, 800

\$0.20475. Total cost of net requirements . . . . . \$982. 80

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: Pins, tent, large.

Maintenance: All troops will be maintained in cantonments.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:                      Item name: Pins, tent, shelter.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	4,382 per 1,000 men per year.....	2, 191, 000

Deductions:			
Cost Basis:	Net requirements.....		2, 191, 000
\$0.0375.	Total cost of net requirements.....		\$82, 162. 50

\*"Working basis" is the quantity required per man or per unit for stated period. or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 3 months per pin per man.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPMENT DIVISION.

Appropriation:                      Item name: Pins, tent, small.  
Maintenance: All troops will be maintained in cantonments.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:                      Item name: Poles, ridge, for tents, hospital, tropical.  
Maintenance: All troops will be maintained in cantonments.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Poles, screens, latrine.

Maintenance: All troops will be maintained in cantonments.

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ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPMENT DIVISION.

*Appropriation:* *Item name:* Poles, tent, hospital, tropical, upright.

Maintenance: All troops will be maintained in cantonments.

---

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Poles, tent, hospital, tropical, wall.

Maintenance: All troops will be maintained in cantonments.

---

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Poles, tent, hospital, ward, upright.

Maintenance: All troops will be maintained in cantonments.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258.  
CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Poles, tent, hospital, ward, wall.  
Maintenance: All troops will be maintained in cantonments.

---

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258.  
CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Poles, tent, pyramidal.  
Maintenance: All troops will be maintained in cantonments.

---

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258.  
CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Poles, tent, shelter.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	735. 4 per 1,000 men per year.....	367, 700

Deductions:		
Cost Basis:	Net requirements.....	367, 700
\$0. 1425.	Total cost of net requirements.....	\$52, 397. 25

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on an estimated life of 1 year and 4 months per pole per man.  
Authority: Gen. Wood.

ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 256.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:*                      *Item name:* Poles, tent, storage, ridge.

Maintenance: All troops will be maintained in cantonments.

---

ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:*                      *Item name:* Poles, tent, storage, upright.

Maintenance: All troops will be maintained in cantonments.

---

ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:*                      *Item name:* Poles, tent, storage, wall.

Maintenance: All troops will be maintained in cantonments.

---

ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:*                      *Item name:* Poles, tent, wall, large, ridge.

Maintenance: All troops will be maintained in cantonments.

ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:*                      *Item name:* Poles, tent, wall, large, upright.*Maintenance:* All troops will be maintained in cantonments.

---

ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:*                      *Item name:* Poles, tent, wall, small, ridge.*Maintenance:* All troops will be maintained in cantonments.

---

ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:*                      *Item name:* Poles, tent, wall, small, upright.*Maintenance:* All troops will be maintained in cantonments.



**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Formerly procured by Engineers.      *Item name:* Rolls, canvas.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.576 per 1,000 men per year.....	288

Total requirements..... 288

**Deductions:**

<b>COST BASIS:</b>	Net requirements.....	288
\$1.75.	Total cost of net requirements.....	\$504.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 288 rolls, canvas, as initial equipment for Engineer Tr. of 500,000 men.  
Estimated 1 years' supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Rolls, canvas, carpenters.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.058 per 1,000 men per year.....	29

Total requirements..... 29

Deductions:

Cost Basis:      Net requirements..... 29  
\$1.50.      Total cost of net requirements..... \$43.50

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 144 rolls, canvas, as initial of equipment for Engineer Tr. of 500,000 men.  
    Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Rolls, canvas, harness makers.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	0.058 per 1,000 men per year . . . . .	29

Total requirements . . . . . 29

Deductions:

Cost Basis:	Net requirements . . . . .	29
\$1.35.	Total cost of net requirements . . . . .	\$39.15

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 144 rolls, canvas, as initial equipment for Engineers Tr. of 500,000 men.  
Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Rolls, canvas, horse-shoeing.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.058 per 1,000 men per year.....	29

Total requirements..... 29

## Deductions:

Cost BASIS: Net requirements..... 29  
\$1.85. Total cost of net requirements..... \$53.65

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 144 rolls, canvas, as initial equipment for Engineer Tr. of 500,000 men.

Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS,

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Saddle, Engineer pack.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.288 per 1,000 men per year .....	144

Total requirements..... 144

## Deductions:

Cost BASIS: Net requirements..... 144  
\$24.50. Total cost of net requirements..... \$3,528.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 720 saddles as initial equipment for Engineer Tr. of 500,000 men. Estimated life of equipment 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Screens, latrine.

Maintenance: All troops will be maintained in captionments.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Previously purchased by Medical Department.  
cotton.*Item name:* Sheets,

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	6,000 for 25,000 . . . . .	120, 000

Total requirements . . . . . 120, 000

Deductions:

Cost Basis: Net requirements . . . . . 120, 000  
\$1.04775. Total cost of net requirements . . . . . \$125, 730. 00

\*"Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Shields, tent.

Maintenance: All troops will be maintained in cantonments.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Stretchers, shoe.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	0.948 per 1,000 men per year.....	474

Total requirements ..... 474

Deductions:  
Cost Basis: Net requirements..... 474  
\$0.3375. Total cost of net requirements..... \$159.98

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Issued on the basis of 4.78 per 1.000 men; estimated life 5 years. Based on previous experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Tape for identification tags.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	411 yards per 1.000 men per year..	205, 500

Deductions:  
Cost Basis: Net requirements..... 205, 500  
\$0.0075 Total cost of net requirements..... \$1, 541. 25

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Based on estimated life of 2 years and 5 months per yard per man. Authority: Gen. Wood.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:*                      *Item name:* Tents, hospital, tropical.

*Maintenance:* All troops will be maintained in cantonments.

---

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:*                      *Item name:* Tents, hospital, ward.

*Maintenance:* All troops will be maintained in cantonments.

---

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:*                      *Item name:* Tents, pyramidal.

*Maintenance:* All troops will be maintained in cantonments.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Tents, shelter, halves.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	832 per 1,000 men per year.....	416,000

**Deductions:**

	Estimated salvage and reclamation.....	104,000
<b>COST BASIS:</b>	Total deductions.....	104,000
<b>\$1.965.</b>	Net requirements.....	312,000
	Total cost of net requirements.....	\$613,080.00

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Based on an estimated life of 1 year and 2 months per tent per man. Authority: Gen. Wood.

**4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:**

Based on 25 per cent of maintenance. Authority: Gen. Wood.

## ESTIMATE FOR

# EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Tents, storage.

Maintenance: All troops will be maintained in cantonments.

## ESTIMATE FOR

# EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Tents, wall, large.

Maintenance: All troops will be maintained in cantonments.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* *Item name:* Tents, wall, small.  
Maintenance: All troops will be maintained in cantonments.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Previously purchased by Medical Department.  
*Item name:* Thread  
cotton, assorted.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	720 for 25,000 . . . . .	14,400 spools.

Total requirements . . . . . 14, 400

Deductions:  
Cost Basis: Net requirements . . . . . 14, 400  
\$0.0375. Total cost of net requirements . . . . . \$540. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimate based on experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Thread, harness.  
2-ounce balls.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.288 per 1,000 men per year.....	144 balls.

Total requirements..... 144

Deductions:  
Cost Basis:      Net requirements..... 144  
\$0.15.      Total cost of net requirements..... \$21.60

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 144 balls thread, as initial supply for Engineer Tr. of 500,000 men.  
    Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* (Formerly purchased by Medical Department.) *Item name:* Thread,  
heavy linen, No. 25, 200 yards on spools.

Initial equipment.	Strength.	Working basis. *	Requirements.
Maintenance.....	500, 000	34 for 25,000.....	480 spools.

Total requirements..... 480

## Deductions:

Cost BASIS: Net requirements..... 480  
\$0.106875. Total cost of net requirements..... \$51. 38

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimate based on experience.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* (Formerly purchased by Medical Department). *Item name:*  
Thread, linen, unbleached, 200 yards on spool.

Initial equipment.	Strength.	Working basis. *	Requirements.
Maintenance.....	500, 000	72 for 25,000.....	1,440 spools.

Total requirements..... 1, 440

## Deductions:

Cost BASIS: Net requirements..... 1, 440  
\$0.106875. Total cost of net requirements..... \$153. 90

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimate based on experience.

QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 258b. Item name: Equipage. Appropriation: Clothing, camp, and garrison equipage.

Office, Chief Signal Officer: Goggles.....	\$57.60
Quartermaster Corps:	
Goggles.....	43,860.00
Powder, hypochlorite of lime, tubes.....	60,120.00
Slings, color, O.D.....	2,502.72
Tags, identification.....	2,184.92
Whistles and chains, kinglet.....	160.05
Whistles and chains, Thunderer.....	879.48
Whistles and chains, siren.....	24.18
Total.....	109,788.95

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258b.

GENERAL SUPPLIES DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name: Goggles.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	4 per div. per year.....	96

Deductions:	
Cost Basis:	Net requirements..... 96
\$0.60 each.	Total cost of net requirements..... \$57.60

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
6.66 goggles, issued per div.; 4 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.

5. REMARKS:  
Wellsworth No. 10 with case used as basis, as specifications were not given.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258b.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Goggles (pair).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	175.44 per 1,000 men per year....	87, 720

Deductions:

COST BASIS:	Net requirements.....	87, 720
\$0.50.	Total cost of net requirements.....	\$43, 860

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated life, 3 months, based on previous experience of the Army.

## ESTIMATE FOR

# EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258b.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Powder, hypochlorite of lime, tubes each.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance .....	500	10,020 per 1,000 men per year.....	5, 010, 000

Total requirements..... 5, 010, 000

Deductions:

COST BASIS:	Net requirements.....	5, 010, 000
\$0.012.	Total cost of net requirements.....	\$60, 120

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated life, 1 month, based on previous experience of the Army.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From contract.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258b.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Shings, color, O. D. (each).

Initial equipment.	Strength.	Working basis.*	Requirements
Maintenance . . . . .	500	20.86 per 1,000 men per year . . . . .	10, 428

Total requirements . . . . . 10, 428

Deductions:

Cost Basis:	Net requirements . . . . .	10, 428
\$0.24 each.	Total cost of net requirements . . . . .	\$2, 502. 72

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated life, 10 months, based on previous experience of the Army.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From contract.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258b.

GENERAL SUPPLIES DIVISION

Appropriation:

Item name: Tags, identification (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	821.40 per 1,000 men per year . . . . .	410, 700

Total requirements . . . . . 410, 700

Deductions:

Cost Basis:	Net requirements . . . . .	410, 700
\$5.32 per M.	Total cost of net requirements . . . . .	\$2, 184. 92

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated life, 29.21 months, based on previous experience of the Army.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

From contract.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258b.

GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Whistles and chains, kinglet (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	1.164 per 1,000 men per year . . . . .	582
Total requirements . . . . .			582

Deductions:  
Cost BASIS: Net requirements . . . . . 582  
\$0.275. Total cost of net requirements . . . . . \$160.05

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.  
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated life, 60½ months, based on previous experience of the Army.  
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
From contract.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258b.

GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Whistles and chains, thunderer (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	8.376 per 1,000 men per year . . . . .	4, 188
Total requirements . . . . .			4, 188

Deductions:  
Cost BASIS: Net requirements . . . . . 4, 188  
\$0.21. Total cost of net requirements . . . . . \$879. 48

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.  
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated life, 60 months, based on previous experience of the Army.  
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
From contract.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258b.

GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Whistles and chains, siren (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.1296 per 1,000 men per year.....	65
Total requirements.....			65

Deductions:	
Cost Basis: Net requirements.....	65
\$0.372. Total cost of net requirements.....	\$24.18

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the Requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated life, 60.37 months, based on previous experience of the Army.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
From contract.



QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 258c. Item name: Musical instruments (equipage). Appropriation: Clothing, camp, and garrison equipage.

Batons, drum major, tariff.....	\$373. 80
Drums, sets, for drum corps of Infantry.....	144. 00
Pouches, music, O. D.....	3, 456. 00
Stands, music.....	793. 80
Trumpets, with slings "G"; trumpets with "F" slides.....	3, 060. 00
Total.....	7, 827. 60

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258c.  
GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Batons, drum major, tariff (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	12 per 1,000 men per year.....	60
Total requirements.....			60
Deductions:			
Cost BASIS:	Net requirements.....		60
\$6.23.	Total cost of net requirements.....		\$373. 80

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated life, 9 months, based on previous experience of the Army.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on actual purchase of 1918.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 254

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Drums, sets, for drum corps of Infantry (sets)

Initial equipment.	Strength.	Working basis.*	Requirements
Maintenance.....	500	0.048 per 1,000 men per year.....	24
Total requirements.....			24

Deductions:

COST BASIS:	Net requirements.....	24
\$6.00 ea.	Total cost of net requirements.....	\$144.00

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated life, 25 months, based on previous experience of the Army.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on actual purchase of 1918.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 254

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Pouches, music, O. D. (each).

Initial equipment.	Strength.	Working basis.*	Requirements
Maintenance.....	500	1.728 per 1,000 men per year.....	864
Total requirements.....			864

Deductions:

COST BASIS:	Net requirements.....	864
\$4.	Total cost of net requirements.....	\$3,456

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated life, 72 months, based on previous experience of the Army.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258c.  
GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Stands, music (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1.764 per 1,000 men per year.....	882
Total requirements.....			882
Deductions:			
Cost BASIS: Net requirements.....			882
\$0.90. Total cost of net requirements.....			\$793.80

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated life, 4 months, based on previous experience of the Army.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 258c.  
GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Trumpets, with slings; "G" trumpets with "F" slides (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2.04 per 1,000 men per year.....	1,020
Total requirements.....			1,020
Deductions:			
Cost BASIS: Net requirements.....			1,020
\$3. Total cost of net requirements.....			\$3,060.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated life 48.88 months, based on previous experience of the Army.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258c.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Drums, sets, for drum corps of Infantry (sets).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.048 per 1,000 men per year.....	24

Total requirements..... 24

Deductions:

COST BASIS: Net requirements..... 24  
\$6.00 ea. Total cost of net requirements..... \$144.00

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated life, 25 months, based on previous experience of the Army.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Based on actual purchase of 1918.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258c.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Pouches, music, O. D. (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1.728 per 1,000 men per year.....	864

Total requirements..... 864

Deductions:

COST BASIS: Net requirements..... 864  
\$4. Total cost of net requirements..... \$3,456

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS.

Estimated life, 72 months, based on previous experience of the Army.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258c.

GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Stands, music (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1.764 per 1,000 men per year.....	882
Total requirements.....			882

Deductions:

COST BASIS:	Net requirements.....	882
\$0.90.	Total cost of net requirements.....	\$793.80

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated life, 4 months, based on previous experience of the Army.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 258c.

GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Trumpets, with slings; "G" trumpets with "F" slides (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2.04 per 1,000 men per year.....	1,020
Total requirements.....			1,020

Deductions:

COST BASIS:	Net requirements.....	1,020
\$3.	Total cost of net requirements.....	\$3,060.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated life 48.88 months, based on previous experience of the Army.

QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 259. Item name: Toilet articles. Appropriation: C. C. and G. E.

Brushes, tooth.....	\$170,003. 40
Combs, medium.....	48,000. 00
	<hr/>
	218,003. 40

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 259.

GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Brushes, tooth (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2,000.64 per 1,000 men per year....	1,000,020

Total requirements..... 1,000,020

Deductions:	
COST BASIS:	Net requirements..... 1,000,020
\$0.17.	Total cost of net requirements..... \$170,003. 40

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated life 6 months, based on previous experience of the Army.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on actual purchase of 1918.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 259.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Combs, medium (each).

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1,200 per 1,000 men per year.....	600,000

Total requirements..... 600,000

## Deductions:

Cost basis: Net requirements..... 600,000  
 \$0.08. Total cost of net requirements..... \$48,000.00

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated life 10 months, based on previous experience of the Army.

# ESTIMATE FOR

# EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 264-265.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation:

Item name: For handling and packing clothing.

Total cost of net requirements..... \$2,000,000.00

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated cost for handling and packing clothing is based on approximately one-third of the cost for same work for 1919; basing this figure on the fact that the Army of 1920 will be about one-third the size of the average strength between July, 1918, and June 30, 1919.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

OFFICE OF DIRECTOR OF PURCHASE AND STORAGE.

Item No. 267.

ADMINISTRATIVE DIVISION.

*Appropriation:* General appropriations, Quartermaster Corps (Clothing and equipage).  
*Item name:* Civilian outer clothing for discharged military prisoners.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	\$10 .....	\$18,380.00
Total cost of net requirements.....			\$18,380.00

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

This estimate is based on actual cost for the first nine months of the fiscal year 1918, during which period conditions and prices existed which it is contemplated will be similar to those for the fiscal year 1920.

**5. REMARKS:**

As provided by the act approved July 9, 1918 (Army appropriation act), civilian outer clothing to the value of \$10 is given to each discharged military prisoner. Based upon the number of prisoners estimated to be released under Item No. 192, the above estimated amount will be required.



# ARMY APPROPRIATION BILL

1920



## REGULAR SUPPLIES OF THE ARMY

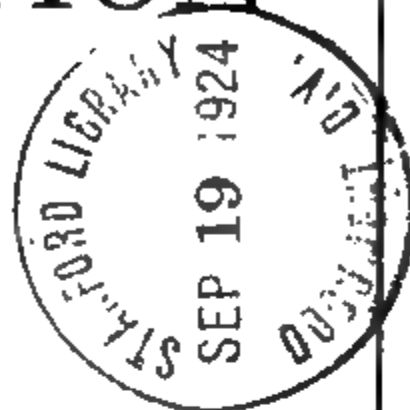
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Printed for the use of the Committee on Military Affairs of the House

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PART 5

WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1919





## REGULAR SUPPLIES OF THE ARMY.

Divisions.	Item.	Appearing.
Construction.....	111a, const. res. fences; 111b, repair res. fences; 113, 118a, heating apparatus; 121b, purchase of heat; 122, light, electric; 122c, supplies, oil lamps, etc., vis, 122d, 122e, 122f, 122g, 124; 125, 125a, post bakeries; 127, 128, ice machines; 133, 133a, laundries.	Gen. Marshall, Col. Hartman, Col. Gumbo, Maj. French.
General supplies.....	On general supplies under following item numbers: 112, 119, 126, 126a, 137, 139, 140, 141, 142 to 146, inc., 149, bakery equipment (p. 4); hardware, light and heavy (p. 7); mess equipment (p. 8); office supplies, bks, stationery (p. 9); rope, etc. (p. 10); rods (p. 11).	Lieut. Col. H. P. Hill, Maj. Curtin.
Subsistence.....	Items 119, 120, 121a, 130, 137, 151, 152, 153, 154, and to 160, inc., ice and knife (p. 8).	Col. Adams.
Raw materials.....	Items 121, 122h, 123, 134, 234b, 356, 229f, 229j, 229n, a229, 229f, 229j, 229r, a229, 122a, 199, sundry items.	Maj. Bronson, Mr. Nold.
Water transport.....	Items 234a, 235c, 236c, x234, 238a.....	Col Bettison, Capt. Deming.
Salvage.....	Item 134.....	Maj. Toy.
Administrative, P. & S.....	Items 147, 148a, 164, 165.....	Capt. Pierce.
Clothing and equipage.....	Item 178.....	Col. Ellison, Mr. McCormick.
Machinery and engineering supplies.....	Various items.....	Capt. Slocum.
Medical and hospital supplies.....	do.....	
Ordnance.....	do.....	
Signal Corps.....	do.....	

### Regular supplies.

Item.	Amount.	Division making estimate.	Formerly procured by—
111. Care and protection on R. S.			
111a. Construction res. fences.....	867,570.00	Con.....	O. Q. M. G.
111b. Repair of res. fences.....	126,703.00	do.....	Do.
112. Stoves, heating.....		G. S.....	Do.
113. Heating apparatus.....	2,500,000.00	Con.....	Do.
118. Repair and maintenance.			
118a. Heating apparatus.....	7,000,000.00	do.....	Do.
118b. Heating stoves.....	50,800.00	G. S.....	Do.
118c. Ranges and cooking stoves.....	109,000.00	do.....	Do.
118d. Coffee roasters.....	6,105.00	do.....	Do.
118e. Cooking appliance.....	10,000.00	do.....	Do.
118f. Ranges, field.....	196,000.00	do.....	Do.
119. Candles.....	100,000.00	Sub.....	Do.
119. Candles.....	332.64	G. S.....	Medical.
120. Matches.....	571,875.00	Sub.....	O. Q. M. G.
121. Fuel in kind.....	13,546,629.50	R. M.....	Do.
122h. Fuel for operation of lighting plants.....	235,000.00	do.....	Do.
123. Fuel for operation in modern batteries.....	225,000.00	do.....	Do.
124. Fuel for operation of laundries.....	228,000.00	do.....	Do.
234a. Fuel for operation of transports.....	1,350,000.00	W. T.....	Do.
235c. Fuel for operation of harbor boats.....	426,000.00	do.....	Do.
236c. Fuel for operation of artillery boats.....	375,000.00	do.....	Do.
X234. Fuel for operation of chartered transports.....	31,171,000.00	do.....	Do.
238a. Fuel for pumping station.....	280,000.00	do.....	Do.
234b. Fuel for incinerators.....	160,000.00	R. M.....	Do.
356. Fuel for Army War College.....	4,800.00	do.....	Do.
229f. Gasoline for automobiles.....	1,975,222.08	do.....	Do.
229j. Gasoline for trucks.....	5,033,562.48	do.....	Do.
229n. Gasoline for motorcycles.....	588,191.76	do.....	Do.
A229. Gasoline for aeroplanes.....	3,569,280.00	do.....	Do.
229f. Lubricating oil for automobiles.....	253,486.64	do.....	Do.
229j. Lubricating oil for trucks.....	645,973.68	do.....	Do.
229n. Lubricating oil for motorcycles.....	75,484.64	do.....	Do.
A229. Lubricating oil for aeroplanes.....	441,653.17	do.....	Do.
121a. Appliances for handling fuel.....	90,000.00	Sub.....	Do.

*Regular supplies—Continued.*

Item.	Amount.	Division making estimate.	Formerly procured by—
121b. Purchase of heat.....	\$646,330.00	Con.....	O. Q. M. G.
122. Light, electric.....	8,704,500.00	do.....	Do.
122a. Mineral oil.....	310,000.00	R. M.....	Do.
122c. Supplies for oil lamps.....	69,320.00	Con.....	Do.
122d. Supplies for electric and gas lighting.....	795,790.00	do.....	Do.
122e. Incandescent lamps.....	202,500.00	do.....	Do.
122f. Lighting plants, inst. and ext.....	1,500,000.00	do.....	Do.
122g. Repairs to lighting plants.....	1,021,867.00	do.....	Do.
124. Engine supplies for modern batteries.....	20,000.00	do.....	Do.
125. Construction of post bakeries.....	250,000.00	do.....	Do.
125a. Repair of post bakeries.....	120,445.00	do.....	Do.
126. Purchase or construction of bake ovens.....	348,050.00	G. S.....	Do.
126a. Repair of bake ovens and apparatus.....	1,110.00	do.....	Do.
127. Purchase and instl. of ice machines.....	100,000.00	Con.....	Do.
128. Maintenance of ice machines.....	811,515.00	do.....	Do.
130. Issue of ice to enlisted men.....	640,500.00	Sub.....	Do.
133. Constr. of laundries.....	1,200,000.00	Con.....	Do.
133a. Repair of laundries.....	1,253,335.00	do.....	Do.
134. Operation and maintenance of laundries.....	635,020.00	Salvage.....	Do.
137. Soap.....	585,600.00	Sub.....	Engineers.
137. Soap.....	34.56	G. S.....	Do.
139. Furniture for post schools and libraries.....	370.00	do.....	O. Q. M. G.
140. Text books for post schools and libraries.....	740.00	do.....	Do.
141. Paper for post schools and libraries.....	21.00	do.....	Do.
142. Equipment for post schools and libraries.....	39,250.00	G. S.....	Do.
143. Instruments for officers' schools.....	370.00	do.....	Do.
144. Office furniture, officers' schools.....	1,147.00	do.....	Do.
146. Other authorized articles for officers' schools.....	296.00	do.....	Do.
147. Subscriptions for commercial papers.....	7,500.00	A.....	Do.
148a. Newspapers, periodicals, subscriptions, authorized allowance.....	11,880.00	do.....	Do.
149. Tableware for kitchen and mess hall.....	506,000.00	G. S.....	Do.
<i>Supplies for horses and mules, etc.</i>			
151. Forage.....	20,557,963.80	Sub.....	Do.
152. Salt.....	16,456.28	do.....	Do.
153. Vinegar.....		do.....	Do.
154. Bedding.....	719,400.00	do.....	Do.
<i>Raising forage at remount depots, military reservations in Hawaiian and Philippine Islands.</i>			
155. Seeds.....	40,000.00	Sub.....	Do.
156. Implements.....	35,000.00	do.....	Do.
157. Labor.....		do.....	Do.
158. Expenses incident.....	25,000.00	do.....	Do.
159. Straw for soldiers' bedding.....	100,000.00	do.....	Do.
160. Stationery.....	1,060,000.00	do.....	Do.
164. Certificates for discharged soldiers.....	1,000.00	A.....	Do.
165. Printing.....	215,000.00	do.....	Do.
178. Towels.....	*468,602.80	C. E.....	Do.
199. Shoeing.....	5,500.00	G. S.....	Do.
Acid, chromic engineers.....	91.20	R. M.....	Engineers.
Acid, muriatic.....	28.75	do.....	Do.
Acid, nitric.....	32.40	do.....	Do.
Acid, phosphoric, 85 per cent engineers.....	33.60	do.....	Do.
Acid, tannic, C. P.....	36.00	do.....	Do.
Alidades, glass, open-sight levelling.....	15,750.00	M. & E.....	Do.
Alidades, boxwood, open sight.....	3,740.00	do.....	Do.
Albumen, egg.....	67.20	do.....	Do.
Alidades.....	1,530.00	do.....	Do.
Alum, powdered.....	8.64	R. M.....	Do.
Alidades, brass, open sight.....	4,389.00	M. & E.....	Do.
Alidades, miniature, telescope with declinator.....	57,275.00	do.....	Do.
Alidades, miniature.....	2,392.50	do.....	Do.
Alidades, priscopes.....	4,603.50	do.....	Do.
Alidades, telescope.....	1,567.50	do.....	Do.
Alcohol, denatured.....	88.80	R. M.....	Do.
Ammeters, 0-30 watchcase for batt. test.....	17.10	M. & E.....	O. C. S. O.
Asphaltum paint, washout sol.....	20.40	R. M.....	Engineers.
Barometers, aneroid, with causes.....	10,560.00	M. & E.....	Do.
Barometers, aneroid, grad. mm. and in.....	741.00	do.....	Do.
Barometers, mercurial, grad. mm. and in.....	1,035.00	do.....	Do.
Bakery equipment.....	50,000.00	G. S.....	See app. No. 1.
Batteries, renewal.....	829.44	M. & E.....	Engineers.
Banana oil.....	5.76	R. M.....	Do.
Beam compass.....	99.00	M. & M.....	Do.
Bells, electric vibrating.....	361.80	do.....	O. C. S. O.
Bells, vibrating, 50 ohm or equiv.....	235.20	do.....	Do.
Bells, vibrating, 110 ohm, 150 v.....	108.00	do.....	Do.

*Regular supplies—Continued.*

Item.	Amount.	Division making estimate.	Formerly procured by—
<i>Raising forage at remount depots, military reservations in Hawaiian and Philippine Islands—Continued.</i>			
Beeswax, yellow.....	\$12.96	R. M.....	Engineers.
Borax.....	100.00	do.....	Do.
Binding posts.....	77.83	M. & E.....	O. C. S. O.
Blasting machines.....	47.25	do.....	Do.
Blocks, connecting.....	4.80	do.....	Do.
Boards, running, 10 wire.....	4.29	do.....	Do.
Boards, sketching, with tripod.....	13,919.25	do.....	Engineers.
Boards, stacha folding.....	3,618.00	do.....	Do.
Bolts, drift, $\frac{1}{2}$ ".....	345.00	do.....	Do.
Bolts, drift, $\frac{1}{4}$ ".....	460.80	do.....	Do.
Box No. 1 for 26" axe.....	591.50	do.....	Do.
Box No. 4 for 26" saw.....	246.00	do.....	Do.
Box No. 5 for 36" saw.....	217.00	do.....	Do.
Boxes, cap. Engineers.....	2,761.50	do.....	Do.
Boxes, pack Engineers' outfit.....	2,242.50	do.....	Do.
Brads, No. 12.....	18.32	do.....	Do.
Brads, No. 14.....	20.61	do.....	Do.
Bulbs, electric Mazda.....	460.80	do.....	Do.
Bulbs, rubber or cable release.....	36.00	do.....	Do.
Cable, 2 conductors, lead-covered meters.....	1,924.48	do.....	O. C. S. O.
Cable, 3 pr. lead covered ft.....	1,779.65	do.....	Do.
Cable, 10 pr. Ferrin cir. loom ft.....	1,190.40	do.....	Do.
Table rollers.....	4.14	do.....	Do.
Camera, automatic, 3A kodak, with case.....	646.20	do.....	Engineers.
Camera, 3A Graflex, with case.....	660.00	do.....	Do.
Caps, detonating, tetryl.....	2,016.00	do.....	Do.
Caps, electric blast, tetryl.....	2,016.00	do.....	Do.
Celluloid sheets .005" thick.....	2,548.80	R. M.....	Do.
Chests, topographical equipment.....	12,750.00	M. & E.....	Do.
Chests, for sketching equipment.....	4,271.25	do.....	O. Q. M. G.
Circuit detector.....	379.50	do.....	Engineers.
Clinometer, Abner.....	2,118.50	do.....	Do.
Do.....	8,437.50	do.....	Do.
Clinometer, reconnaissance.....	11,808.75	do.....	Do.
Clinometer service, with staff.....	15,691.00	do.....	Do.
Clinometer telescope.....	20,938.50	do.....	Do.
Clinometer telescope, with slide rule.....	28,200.00	do.....	Do.
Cmps. testing, Frankel.....	1,151.51	do.....	O. C. S. O.
Cloth, ruby.....	79.20	do.....	Engineers.
Compasses, box.....	900.00	do.....	Do.
Compasses, prismatic luminous.....	16,770.00	do.....	Do.
Compass, watch.....	19,868.31	do.....	Do.
Cord, detonating, 6 mm., 20-yd. spool.....	6,105.60	do.....	Do.
Cord, lamp, feet.....	117.03	do.....	O. C. S. O.
Crossarms, Lightwood, 8-pin.....	1,152.00	do.....	Do.
Declinators.....	2,265.12	do.....	Engineers.
Declinators, with 2 clamping screws.....	10,476.00	do.....	Do.
Developer, M. Q. (100 taken in box).....	48.95	do.....	Do.
Developer, Pyro tank.....	244.65	do.....	Do.
Disks, cipher.....	26.55	do.....	O. C. S. O.
Drawing instruments (case contain 1 pr. compass ext. leg drawing pen proportional divider).....	15,375.00	do.....	Engineers.
Dragons blood.....	52.80	do.....	Do.
Drills, rock, compressed-air, portable.....	932.00	do.....	O. C. S. O.
Dental supplies.....	*446,677.64	M. & H.....	Medical.
Exploders, magneto.....	4,232.00	M. & E.....	Engineers.
Engineers depots, maintenance of.....	56,375.00		
Explosives, cylinder.....	2,304.00	Ord.....	Do.
Explosives, rect. blocks.....	64,512.00	do.....	Do.
Field glasses, with case.....	5,490.00	M. & E.....	Do.
Films, autographic kodak, 3 $\frac{1}{2}$ x 5 $\frac{1}{2}$ rolls of 6 exposures.....	1,747.20	do.....	Do.
Flashlights, electric comp.....	1,152.50	do.....	Do.
Do.....	2,864.16	do.....	O. C. S. O.
Flash cartridges.....	187.20	do.....	Engineers.
Flash powder, Victor, Norman grade, 3-oz. boxes.....	499.20	do.....	Do.
Forge, blacksmith port. comp.....	1,680.00	do.....	O. C. S. O.
Fuse, Bickford.....	806.40	do.....	Engineers.
Fuse, instantaneous type, Cloverleaf.....	2,880.00	do.....	Do.
Field equipment.....	* 148,011.15	M. & H.....	Medical.
Fuse, lighters.....	1,489.60	do.....	Engineers.
Furniture.....		G. S.....	See app. No 2.
Formaline, Engineers.....	96.80	R. M.....	Engineers.
Glass, magnifying.....	117.00	M. & E.....	Do.
Glass, magnifying, hand.....	54.00	do.....	Do.
Glasses, field, type E E.....	90,792.00	do.....	O. C. S. O.
Glasses, magnifying, large, with tripod.....	19.00	do.....	Engineers.
Glasses, field, Galilean, 4 $\frac{1}{2}$ -power.....	480.00	do.....	O. C. S. O.
Glasses, magnifying, pocket.....	405.00	do.....	Engineers.

## Regular supplies—Continued.

Item.	Amount.	Division making estimate.	Formerly procured by—
<i>Raising forage at remount depots, military reservations in Hawaiian and Philippine Islands—Continued.</i>			
Glasses, field, 8-power, without mil. scale.....	\$23,520.00	M. & E....	O. C. S. O.
Glasses, field, 12-power, prismatic binocular.....	950.00	do.....	Do.
Glasses, field, 16-power, prismatic binocular.....	675.00	do.....	Do.
Glasses, field, prism. binocular, 8-power.....	23,040.00	do.....	Do.
Gloves, lineman's, gross.....	38,966.40	do.....	Do.
Gloves, rubber, with buckskin overgloves.....	90.00	do.....	Do.
Gum arabic.....	240.00	R. M.....	Engineers.
Hardware, heavy.....	245,631.86	G. S.....	See app. No. 3.
Hardware, light.....	254,712.52	do.....	See app. No. 4.
Hydrometers, Baumé.....	427.50	M. & E.....	O. C. S. O.
Hospital furniture and equipment.....	* 52,619.75	M. & H.....	Medical.
Hypo-acid, kodak, 1-lb. boxes.....	312.00	R. M.....	Engineers.
Instruments, drawing, field.....	84.00	M. & E.....	Do.
Instruments, drawing.....	2,650.00	do.....	Do.
Instruments, drawing, lithographic.....	480.00	do.....	Do.
Instruments, drawing, office.....	777.00	do.....	Do.
Insulators, clamp.....	668.22	do.....	O. C. S. O.
Insulators, with lag screw, Repp type.....	2,034.05	do.....	Do.
Insulators, pigtail.....	379.26	do.....	Do.
Insulators, pony plain.....	24.35	do.....	Do.
Insulators, porc., No. 4, with screws.....	132.30	do.....	Do.
Insulators, wooden knob, fr. typel, 1½".....	829.55	do.....	Do.
Intensifier, tubes.....	50.40	do.....	Engineers.
Ice, preservation of stores.....	160,125.00	Sub.....	O. Q. M. G.
Knife, steel, eraser.....	502.50	do.....	Engineers.
Jacks, cable reel.....	199.10	M. & E.....	O. C. S. O.
Lamps, electric, two.....	15.00	do.....	Engineers.
Lamps, flashlight.....	381.93	do.....	O. C. S. O.
Laboratory supplies.....	* 265,282.77	M. & H.....	Medical.
Lye, concentrated, 1-lb. can.....	5,277.60	R. M.....	Do.
Levels, Engineers' dumpy.....	1,885.00	M. & E.....	Engineers.
Marching compass.....	56,358.60	do.....	Do.
Megaphones.....	966.00	do.....	O. C. S. O.
Mess equipment.....	48,895.26	G. S.....	See app. No. 5.
Medicines, antiseptics, and disinfectants.....	* 2,007,871.44	M. & H.....	Medical.
Miscellaneous hospital supplies.....	* 398,933.13	do.....	Do.
Miscellaneous articles (impossible to estimate).....	* 855,984.70	do.....	Do.
Mutton tallow, refined.....	6.72	R. M.....	Engineers.
Nails, horseshoe, No. 7.....	790.20	M. & E.....	Do.
Nails, horseshoe, No. 60.....	853.35	do.....	Do.
Nails, wire, 4d.....	16.03	do.....	Do.
Nails, wire, 8d.....	16.03	do.....	Do.
Nails, wire, 10d.....	16.03	do.....	Do.
Nails, wire, 16d.....	3,915.92	do.....	Do.
Nails, wire, 20d.....	987.48	do.....	Do.
Nails, wire, spikes, 30 l.....	2,592.00	do.....	Do.
Nails, wire, spikes, 60d.....	2,361.00	do.....	Do.
Nuts, assorted.....	608.00	do.....	Do.
Odometers, with case.....	1,812.50	do.....	Do.
Office supplies, books, stationery.....	376,155.45	G. S.....	See app. No. 6.
Oil, transformer, 5 gal. cans, boxed.....	2.11	R. M.....	Medical.
Oil (gas engine cylinder), 5 gal. can.....	29.00	do.....	Do.
Oil, lavender, 1 oz. bottles.....	12.00	do.....	Engineers.
Oil, olive, ½ pt. can.....	30.00	do.....	Do.
Paint, white enamel, 1 gal. can.....	6,000.00	do.....	Medical.
Panels, art. light or med. rect. sets.....	230.72	M. & E.....	O. C. S. O.
Panels, heavy art. indent. large sets.....	525.00	do.....	Do.
Panels, indent. corps sets.....	3.14	do.....	Do.
Panels, inf. indent. bn. sets.....	109.48	do.....	Do.
Panels, inf. indent. div. sets.....	21.68	do.....	Do.
Panels, inf. indent. brig. sets.....	25.65	do.....	Do.
Panels, inf. indent. regt. sets.....	54.95	do.....	Do.
Panels, inf. marking.....	2,248.80	do.....	Do.
Panels, inf. rect. sets.....	107.28	do.....	Do.
Panels, heavy art. rect. large sets.....	400.50	do.....	Do.
Panels, light art. ident. sets.....	304.15	do.....	Do.
Panels, med. art. ident. sets.....	63.75	do.....	Do.
Panels, trench art. ident. sets.....	23.97	do.....	Do.
Pantographs.....	217.50	do.....	Engineers.
Paper, developing, 3½ x 4½.....	396.00	do.....	Do.
Paper, tracing, 30-inch 20 yd. roll.....	1,462.50	do.....	Do.
Paper, printing out, 3½ x 5½.....	223.20	do.....	Do.
Paper, drawing, single, 24" x 5 yd. roll, in Japan, tube.....	547.50	do.....	Do.
Paste, soldering, 4 oz. tins.....	22.90	R. M.....	Do.
Photo clips.....	37.44	M. & E.....	Do.
Pikes, wire.....	481.50	do.....	O. C. S. O.
Pins, surveyors.....	1.05	do.....	Do.

*Regular supplies—Continued.*

Item.	Amount.	Division making estimate.	Formerly procured by—
<i>Raising forage at remount depots, military reservations in Hawaiian and Philippine Islands—Continued.</i>			
Plates, zinc, grained, 20 x 26"	\$138.00	M. & E.	Engineers.
Plane, table, 16 x 16", etc	12,340.50	do.	Do.
Plane, table, 24 x 31"	10,139.40	do.	Do.
Plates, zinc grained, 22 x 32"	146.30	do.	Do.
Plane, table, 18 x 24", complete	10,585.00	do.	Do.
Poles, lance	6,115.20	do.	O. C. S. O.
Poles, pike, 14 ft.	60.00	do.	Do.
Plumb line	1,236.75	do.	Engineers.
Protractors, rect	326.25	do.	Do.
Printing frames, 5 x 7"	42.00	do.	Do.
Printing frames, glass, 5 x 7"	40.20	do.	Do.
Proportional dividers	939.60	do.	Do.
Protractors, G. S. semicircular, 6"	851.20	do.	Do.
Protractors, graduated in mils	500.00	do.	Do.
Protractors, G. S. semicircular, with arms	4,728.00	do.	Do.
Protractors, zylonite rectangular	1,612.50	do.	Do.
Protractors, rectangular	1,428.75	do.	Do.
Pumice, powdered in cans	12.00	R. M.	Do.
Reducer tubes	23.45	M. & E.	Do.
Reels, Barrow Payont	76.95	do.	O. C. S. O.
Reels, breast	1,961.85	do.	Do.
Reels, trench, new Signal Corps type	2,741.64	do.	Do.
Reels, wire firing	2,217.60	do.	Engineers.
Repair kits, steel tape	742.05	do.	Do.
Rivets, sets of 3 nos.	7.22	do.	Do.
Rivets, harness copper, assorted	36.00	do.	Do.
Rods, ground type E	9.80	do.	O. C. S. O.
Rods, level, Philadelphia	1,260.00	do.	Engineers.
Rope and rope material	15,434.30	G. S.	See app. No. 7.
Rods, surveyors'	209.00	do.	O. C. S. O.
Rosin, powdered, in cans	10.56	R. M.	Engineers.
Ruler, boxwood, triangular, 8"	2,281.35	M. & E.	Do.
Sapinettes	346.00	do.	O. C. S. O.
Screws, lag, 1/2 inch x 4 1/2 inch	407.80	do.	Do.
Scales, Engineers', 40 cm	400.00	do.	Engineers.
Scales, plotting, 1/20000 millimeters	1,984.50	do.	Do.
Sets, testing, magneto	550.76	do.	O. C. S. O.
Sets, testing, tone	224.40	do.	Do.
Sextants, pocket	6,000.00	do.	Engineers.
Shields, tubular	51.90	do.	Do.
Slide rule, 16", with case	303.60	do.	Do.
Stadia computers	16.15	do.	Do.
Stadia computers, rod, 10 ft., folding	10,575.00	do.	Do.
Staples	230.40	do.	Do.
Staples, Blake, insulated, No. 5	16.91	do.	O. C. S. O.
Steel, soft, 1/2", round, 9 ft	316.80	do.	Engineers.
Steel, arrow (tally pins), 10"	292.50	do.	Do.
Steel, soft, 1/2" round, 9 ft	633.60	do.	Do.
Steel, soft, 1", round, 9 ft., bars	1,140.46	do.	Do.
Steel, soft, 1/2 inch x 1, 9 ft. bars	728.64	do.	Do.
Steel, soft, 1/2 inch x 2, 9 ft. bars	538.56	do.	Do.
Stereoscope, large	60.00	do.	Do.
Steel, soft, 1/2 inch x 1 1/2 inch, 9 ft. bar	950.40	do.	Do.
Stereoscope, hand	13.10	do.	Do.
Steel, soft, 1/2 x 2", 9 ft. bar	1,092.96	do.	Do.
Steel, soft, 1 inch x 2", 9 ft. bar	2,899.72	do.	Do.
Surgical dressings	* 2,191,489.12	M. & H.	Medical.
Surgical instruments	* 256,538.94	do.	Do.
Packs, millionite	10.73	M. & E.	O. C. S. O.
Tags, cable, heavy artillery	74.42	do.	Do.
Tags, wooden, cable, trench mortar	34.20	do.	Do.
Tally machines	1,658.25	do.	Engineers.
Tanks, developing outfit	80.00	do.	Do.
Tripod, extension leg, Johnson movement	46,350.00	do.	Do.
Tape, friction, pounds	2,149.20	do.	O. C. S. O.
Tape, rubber, pounds	398.16	do.	Do.
Tape, rubber insulated	414.72	do.	Engineers.
Thermometers, photographic	20.79	do.	Do.
Thermometers, weather (grad.), cent. and Fahr	975.00	do.	O. C. S. O.
Tools, steel, in 5" bar	304.00	do.	Engineers.
Touche, bottles	14.40	do.	Do.
Transits	13,860.00	do.	Do.
Tripods, crown, No. 2, folding	176.00	do.	Do.
Tripods, metal, folding	75.40	do.	Do.
Tripods, wood, folding	2,196.00	do.	Do.
Turpentine	64.80	R. M.	Do.
Unions, detonating, cord special	714.24	M. & E.	Do.
Varnish	10.80	R. M.	Do.

Regular supplies—Continued.

Item.	Amount.	Division making estimate.	Formerly procured by
<i>Raising forage at remount depots, military reservations in Hawaiian and Philippine Islands—Continued.</i>			
Veterinary supplies.....	* \$379,117.51	M. & H....	Medical.
Voltmeters, western model 280.....	1,264.80	M. & E....	O. C. S. O.
Watches, stop, standard U. S. A.....	1,250.00	do.....	Do
Watches, wrist, luminum dial.....	26,635.04	do.....	Do
Watches, half, crometer luminous dial.....	34,265.00	do.....	Engineers.
Winch, hand (balloon company).....	1,125.00	do.....	O. C. S. O.
Wire, B. S. No. 10.....	240.00	do.....	Engineers
Wire, B. S. No. 16.....	888.00	do.....	Do
Wire, copper No. 30, 1-lb. spools.....	161.00	do.....	Do
Wire, field, U. S. standard, single, miles.....	90,768.00	do.....	O. C. S. O.
Wire, field, U. S. standard, tp., miles.....	579,348.00	do.....	Do
Wire, firing, double, lead, No. 14.....	8,640.00	do.....	Engineers
Wire, G. I., No. 14 B. W. G., 82 miles.....	2,750.12	M. & E....	O. C. S. O.
Wire netting, No. 16 D. & S.....	84.00	do.....	Engineers
Wire O. D. T. P., No. 17 B. & S., miles.....	35,360.90	do.....	O. C. S. O.
Wire outpost, T. P., miles.....	978,370.00	do.....	Do
Zinc, squares.....	330.00	do.....	Engineers
X-ray supplies.....	* 698,881.72	M. & H....	Medical
	118,327,591.51		

* The following items are not included in the above total:			
178 towels.....			\$49,420.00
Laboratory supplies.....			25,700.00
Veterinary supplies.....			173,100.00
Field equipment.....			145,000.00
X-ray supplies.....			698,881.72
Dental supplies.....			445,000.00
Surgical instruments.....			256,000.00
Hospital furniture and equipment.....			32,000.00
Medicines, antiseptics, and disinfectants.....			2,000,000.00
Miscellaneous hospital supplies.....			75,000.00
Surgical dressings.....			2,191,000.00
Miscellaneous articles.....			43,000.00
			4,170,000.00
Transferred to medical supplies.			



FORM F 2. GROUP No. 3.

ESTIMATE FOR  
CONSTRUCTION AND KINDRED PROJECTS.

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 111-a.

*Item name:* Reservation fences, construction.*Appropriation:* Regular supplies.

Total estimated cost: \$67,570.

Total required: \$67,570.

**Explanation:**

The amount requested under this item, namely, \$67,570, is double the amount which was asked for and appropriated under the same item for the fiscal year 1919. The reason for this increase is that during the last two years very little work has been done in building the permanent reservation fences around the military posts and in addition to this fact the number of possible permanent posts and the size of a restricted portion of many of the regular posts has been largely increased.

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FORM F 2. GROUP No. 11.

ESTIMATE FOR  
CONSTRUCTION AND KINDRED PROJECTS.

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 111b.

*Item name:* Reservation fences, repair.*Appropriation:* Regular supplies.

Total estimated cost: \$126,703.

Total required: \$126,703.

**Explanation:**

The amount appropriated in the regular Army bill for the fiscal year 1919 was \$76,790. As only a limited amount of work has been done in maintaining the regular establishments during the last year, it is considered necessary to add 50 per cent to the amount previously appropriated for this reason and to the sum total to add 10 per cent on account of the increased labor and material.

FORM F 2. GROUP No. 3.

**ESTIMATE FOR  
CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 113.***Item name:* Heating apparatus, installation (no stoves).*Appropriation:* Regular supplies.*Total estimated cost:* \$2,500,000.*Total required:* \$2,500,000.**Explanation:**

There was appropriated in the bill for the fiscal year 1919 the sum of \$24,864,355. As it is expected that the construction program will be very much less for the year 1920, an amount has been included which is simply considered sufficient to take care of necessary extensions for the heating systems to new buildings that may be built within the existing posts, and also to include new installation at such points not already provided for as may be used for permanent occupancy.

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FORM F 2. GROUP No. 11.

**ESTIMATE FOR  
CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 118a.***Item name:* Heating apparatus, not including stoves, repair of.*Appropriation:* Regular supplies.*Total estimated cost:* \$7,000,000.*Total required:* \$7,000,000.**Explanation:**

It is estimated that the total value of the plants installed at all points amounts to about \$35,000,000 and that for maintenance and repair it will be necessary on this class of construction to allow about 20 per cent to cover the cost of the renewals and repair.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 118b.

GENERAL SUPPLIES DIVISION.

*Appropriation:**Item name:* Stoves (heating), repair and maintenance.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.1016 per capita.....	\$50,800

Total requirements..... \$50,800  
 Total cost of net requirements..... 50,800

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Estimate.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Estimate.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 118c.

GENERAL SUPPLIES DIVISION.

*Appropriation:**Item name:* Repair and maintenance of Army ranges and cooking stoves.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.218 per capita.....	\$109,000

Total requirements..... \$109,000  
 Total cost of net requirements..... 109,000

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Estimate.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Estimate.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 118d.  
GENERAL SUPPLY DIVISION.

Appropriation: Item name: Repair and maintenance of coffee roasters.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.01221 per capita.....	\$6, 105
Total requirements.....			\$6, 105
Total cost of net requirements.....			6, 105

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 118e.  
GENERAL SUPPLY DIVISION.

Appropriation: Item name: Repair and maintenance of cooking appliances.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.02 per capita.....	\$10, 000
Total requirements.....			\$10, 000
Total cost of net requirements.....			10, 000

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 118f.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Repair and maintenance of field ranges,  
including equipment to complete field ranges.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	\$0.392 per capita . . . . .	\$196, 000

Total requirements . . . . . \$196, 000

Total cost of net requirements . . . . . 196, 000

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated.

**FORM F 1.**

**PURCHASE AND STORAGE DEPARTMENT. Item No. 119.**

**Appropriation:** Regular supplies.      **Item name:** Candles.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	1 pound for each 100 men 366 days.	1, 830, 000

**Total requirements..... 1, 830, 000**

<b>COST BASIS:</b>	<b>Net requirements.....</b>	<b>1, 830, 000</b>
<b>\$0.157 per lb.</b>	<b>Total cost of net requirements. ....</b>	<b>{ (\$287, 310)</b>
		<b>100.000</b>

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

**Quantity based on 1 pound per 100 men per day per former experience.**

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

**Price is based on actual cost.**

The quantity of 1,830,000 pounds at 0.157 cents per pound amounts to \$287,310, but it is not believed that this amount will be needed, and therefore a flat estimate of \$100,000 is submitted.

**4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:**

**Candles are issued to organizations, stables, etc., when other illuminating supplies are not provided for, as follows:**

To organizations of enlisted men: For each ration, except the Filipino ration, 0.24 ounce; in Alaska, 0.32 ounce; for each Filipino ration, 0.12 ounce. To headquarters in the field of organizations larger than a company, to hospitals, bakeries, depots of supply, guards, and telegraph stations: Such quantities as the commanding officer may order as necessary. For use in lanterns furnished to the Army by the Government and used in the public service: Such quantities as the commanding officer may order as necessary.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.  
GENERAL SUPPLIES DIVISION.

Item No. 119.

Appropriation: (Previously purchased by Medical Department).  
for lanterns.

Item name: Candles

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	396 for 25,000.....	7,920

COST BASIS:  
\$0.04½

Total cost of net requirements..... \$232.64

\*"Working basis" is the quantity required per man or per unit for stated period ;  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimate based on experience.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on actual purchase of 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DEPARTMENT.

Item No. 120.

SUBSISTENCE DIVISION.

Appropriation: Regular supplies.      Item name: Matches.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	$\frac{1}{2}$ box per man, 366 days.....	<i>Boxes.</i> 91,500,000

Total requirements.....boxes..      91,500,000

Cost BASIS:      Net requirements.....boxes..      91,500,000  
\$0.90 per gross      Total cost of net requirements.....      \$571,875

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
While in time of war it was found that  $\frac{4}{5}$  of a box per man per day was necessary it is thought that under peace conditions  $\frac{1}{2}$  box per man per day will be sufficient.  
Matches are issued for lighting fires and lights, for which fuel and the illuminating supplies are issued in such quantities as the commanding officer may order as necessary. (See par. 1215, Army Regulations, 1913.)  
Matches are issued to organizations under Army Regulations for the starting of trench fires and for lanterns in such quantities as the commanding officer directs as necessary. (Army Regulations, 1213.)

QUARTERMASTER CORPS, RAW MATERIAL DIVISION.

Item No. 121.      Item name: Fuel in kind.      Appropriation: Regular supplies.

SUMMARY.

Quartermaster Corps:	
Coal.....	\$6,375,000.00
Coke.....	126,000.00
Wood.....	2,125,000.00
	<hr/>
	\$8,626,000.00
Ordnance Department:	
"Ordnance store ammunition".....	4,842,577.00
"Ordnance service".....	78,052.50
	<hr/>
	4,920,629.50
Total.....	<hr/>
	13,546,629.50



**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 121.

RAW MATERIALS DIVISION.

Appropriation: Regular supplies.      Item name: Coal.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	3 tons.....	1, 500, 000

Total requirements: ..... 1, 500, 000

COST BASIS:      Net requirements..... 1, 500, 000  
\$1.25.      Total cost of net requirements..... \$6, 375, 000. 00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Determined from past consumption at posts, camps, and stations.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on current average prices—\$3.50 per ton for bituminous and \$6.50 for anthracite—approximately 25 per cent of total quantity being anthracite and the balance bituminous.

Date, December 12, 1918. Checked, B. Estimate made by EMB.

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ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 121.

RAW MATERIALS DIVISION.

Appropriation:                      Item name: Coke.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0. 03 ton.....	Tons. 15, 000

Total requirements.....	tons..	15, 000
Cost Basis:            Net requirements.....	tons..	15, 000
\$8. 40.                Total cost of net requirements.....		\$126, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Determined from past consumption at posts, camps, and stations on what has been ordered on present strength.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on current average prices. Prices are fixed by the Fuel Administration and vary from \$6 to \$11 per ton.

Date, December 12, 1918.    Checked, B.    Estimate made by EMB.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 121.

RAW MATERIALS DIVISION.

Appropriation:

Item name: Wood.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	½ cord.....	250, 000
Total requirements.....			250, 000
COST BASIS:	Net requirements.....		250, 000
\$8.50.	Total cost of net requirements.....		\$2, 125, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Determined from past consumption at posts, camps, and stations.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on current average prices. Prices range from \$4 to \$20, depending on the locality.

Date, December 12, 1918. Checked, B. Estimate made by EMB.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 121.

RAW MATERIALS DIVISION.

Appropriation: Formerly purchased by "Ordnance Stores, Ammunition." Item  
name: Fuel.

	Strength.	Working basis.*	Requirements.
			Tons.
Maintenance.....	500, 000	Anthracite, 0.063674.....	31, 837
		Bituminous, 1.309422.....	654, 711
		Coke, 0.2.....	100, 000
		Fuel oil, 35.322.....	Gallons. 17, 661, 000
		Gasoline, 0.696.....	348, 000
		Kerosene, 0.1192.....	59, 600

COST BASIS:		
Anthracite, at \$6.50.....		\$206, 940. 50
Bituminous, at \$3.50.....		2, 291, 488. 50
Coke, at \$8.40.....		840, 000. 00
Fuel oil, at \$0.08.....		1, 412, 880. 00
Gasoline, at \$0.24.....		83, 520. 00
Kerosene, at \$0.13.....		7, 748. 00
Total cost of net requirements.....		4, 842, 577. 00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Requirements furnished by Ordnance Department as per statement attached.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on average current prices.
3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:  
Estimated that there will be practically none on hand, as no large stock is carried.  
Date, December 12, 1918. Checked, B. Estimate made by EMB.

Statement showing the fuel requirements of the Ordnance Department for fiscal year 1920.

Name of plant.	Anthracite.	Bituminous.	Coke.
APPROPRIATION: "ORDNANCE STORES, AMMUNITION."			
<b>Arsenals:</b>	<b>Tons.</b>	<b>Tons.</b>	<b>Tons.</b>
Augusta, Augusta, Ga.....		495	
Benicia, Benicia, Cal.....		30	
Frankford, Philadelphia, Pa.....	85	23,000	
Picatinny, Dover, N. J.....	100	17,600	
Raritan, Metuchen, N. J.....		5,000	
Rock Island, Rock Island, Ill.....		52,752	
San Antonio, San Antonio, Tex.....		70	
Springfield, Springfield, Mass.....		9,500	
Watervliet, Watervliet, N. Y.....	25,136	8,860	
Watertown, Watertown, Mass.....	800	49,200	
<b>Engineering division, proving grounds:</b>			
Aberdeen, Aberdeen, Md.....	5,158		
Savanna, Savanna, Ill.....		1,500	
<b>Inspection division, proving grounds:</b>			
Erie, Port Clinton, Ohio.....		16,700	
Scituate, Scituate, Mass.....	355	6,704	
Saybrook, Saybrook, Conn.....	203		
<b>Nitrate division:</b>			
No. 1, Sheffield, Ala.....		44,650	30,000
No. 2, Muscle Shoals, Ala.....		418,660	70,000
<b>Total.....</b>	<b>31,837</b>	<b>654,711</b>	<b>100,000</b>
APPROPRIATION "ORDNANCE SERVICE."			
<b>Supply division, Ordnance depots:</b>			
Middletown, Pa.....		110	
Curtis Bay, South Baltimore, Md.....		1,425	
Pig Point, Pig Point, Norfolk, Va.....		530	
Raritan, Metuchen, N. J.....	6,000	4,000	
Sandy Hook, Fort Hancock, N. J.....	200		
Delaware, Pedricktown, N. J.....		3,000	
Charleston, Charleston, S. C.....		1,200	
Washington, D. C.....		150	
Springfield, Springfield, Mass.....	200		
<b>Total.....</b>	<b>6,400</b>	<b>10,415</b>	
<b>Grand total.....</b>	<b>38,237</b>	<b>665,126</b>	<b>100,000</b>

## FUEL-OIL REQUIREMENTS.

Name of plant.	Fuel oil.	Gasoline.	Kerosene.
APPROPRIATION: "ORDNANCE STORES, AMMUNITION."			
	<b>Gallons.</b>	<b>Gallons.</b>	<b>Gallons.</b>
Aberdeen Proving Ground.....	10,000	52,000	
Augusta Arsenal.....	12,000	10,000	
Benicia Arsenal.....	24,000		
Frankford Arsenal.....	1,500,000	50,000	50,000
Picatinny Arsenal.....	15,000		
Rock Island.....	1,560,000		
Springfield Armory.....	780,000		
Watertown Arsenal.....	13,760,000	100,000	6,000
Erie Proving Ground.....		100,000	3,000
Scituate Proving Ground.....		36,000	600
Saybrook Proving Ground.....			
<b>Total.....</b>	<b>17,661,000</b>	<b>348,000</b>	<b>59,600</b>

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 121.  
RAW MATERIALS DIVISION.

Appropriation: Formerly purchased by "Ordnance Service." Item name: Fuel.

	Strength.	Working basis.*	Requirements.
			Tons.
Maintenance.....	500, 000	{ Anthracite, .0128..... Bituminous, .02083.....	6, 400 10, 415

COST BASIS:	
Anthracite, at \$6.50.....	\$41, 600. 00
Bituminous, at \$3.50.....	36, 452. 50
Total cost of net requirements.....	78, 052. 50

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Requirements furnished by Ordnance Department as per statement attached.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on average current prices of \$6.50 per ton for anthracite and \$3.50 for bituminous coal.
- 4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
Estimated that there will be practically none on hand, as no large stock is carried.

Date, December 12, 1918. Checked, B. Estimate made by EMB.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS. Item No. 122(h).  
RAW MATERIALS DIVISION.

Appropriation: Regular supplies. Item name: Fuel for operation of lighting plants.  
Maintenance: Strength, 500,000.

COST BASIS:	Total cost of net requirements.....	\$235, 000. 00
		\$0.47.

- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on per capita cost (\$0.47) for fiscal year 1917.
- Date, December 12, 1918. Checked, B. Estimate made by EMB.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 123.

RAW MATERIALS DIVISION.

*Appropriation:* Regular supplies.      *Item name:* Fuel for operation of modern batteries.

Total cost of net requirements, \$225,000.

**5. REMARKS:**

Based on cost for the fiscal year 1918 (\$204,722.61) the increased amount being required to provide for maintenance of new installations.

Date, December 12, 1918. Checked B. Estimate made by EMB.

**ESTIMATE FOR**

**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 134.

RAW MATERIALS DIVISION.

*Appropriation:* Regular supplies.      *Item name:* Fuel for operation of laundries.  
Maintenance: Strength, 500,000.

**COST BASIS:**

\$0.456.,      Total cost of net requirements. . . . . \$228,000.00

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Based on reports of operation of laundries during first three months of fiscal year 1919, showing a per capita cost of \$0.456.

Date, December 12, 1918. Checked B. Estimate made by EMB.

ESTIMATE FISCAL YEAR 1920, \$1,350,000.

Subitem No. 234a. Item: Fuel.

United States.....	\$1,100,000
Philippine Islands.....	250,000
<b>Total.....</b>	<b>1,350,000</b>

**REMARKS:**

*United States.*—This item provides for the procurement of all fuel required for the operation of the fleet of Government-owned transports, plying in both the trans-Atlantic and Pacific service, and between United States ports, and Panama, Porto Rico, St. Thomas, etc.

The estimate is based on available costs for the fiscal year 1918 and the estimate requirements for the fiscal year 1919.

*Philippine Islands.*—The estimate of the authorities of the Philippine Government is based on costs in the fiscal year 1918 and is the same as for the fiscal year 1919.

## ESTIMATE FISCAL YEAR 1920. \$426,000.

## Item No. 235c. Item: Fuel.

United States.....	\$300,000
Philippine Islands.....	126,000
Total.....	426,000

## Remarks:

*United States.*—This item provides for the procurement of coal, gasoline, cordwood, and fuel oil for the operation of vessels of the River and Harbor Boat Service.

This estimate is based on costs of previous years and for the fiscal year 1918. Allowance is made for the increased cost of these commodities as well as for contingencies that may arise in this service.

*Philippine Islands.*—This estimate is based on similar costs for the fiscal year 1918 and previous years, allowance being made for the increasing cost of these items of supplies.

## ESTIMATE FISCAL YEAR 1920, \$375,000.

## Subitem No. 236c. Item: Fuel.

United States.....	\$345,500
Philippine Islands.....	29,500
Total.....	375,000

## Remarks:

*United States.*—This item provides for the procurement of all fuel (coal, gasoline, and fuel oil) required for the operation of vessels engaged in the Coast Artillery Service. This item of supplies is largely obtained under contract, and the cost has greatly increased, requiring an increase in the funds for this item of supplies. The estimate is based on available costs for the fiscal year 1918 and previous years.

*Philippine Islands.*—The estimate for this department is based on costs for the fiscal year 1917 and 1918, with allowance for the increased cost of all fuel.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. X-234.

WATER TRANSPORT DIVISION.

*Appropriation:* *Item name:* Fuel for operation of transports.

Total cost of net requirements..... \$31, 701, 000

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
This item transferred from X-234, operation of transports in Army transportation.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 238a.

RAW MATERIALS DIVISION.

*Appropriation:* W. & S. *Item name:* Fuel for pumping plants.

Maintenance, 500,000.

COST BASIS: Total cost of net requirements..... \$280, 000  
\$0.56.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Per capita cost for fiscal year 1917.

5. REMARKS:  
Based on per capita cost (56 cents) for fiscal year 1917.  
Date, December 12, 1918. Estimate made by E. M. B.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 243b.

RAW MATERIALS DIVISION.

*Appropriation:* W. & S.      *Item name:* Fuel for incinerators.

Total cost of net requirements ..... \$160,000

**3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:**

Estimated that there will be none on hand, as fuel is taken from stock on hand at posts and camps for all purposes.

**5. REMARKS:**

Records show 1,694 incinerators now in use, the monthly consumption of fuel being 400 tons of coal, 6,208 cords of wood, and 3,320 gallons of oil, which at the current average prices of \$3.50 per ton for coal, \$8.50 per cord for wood, and 10 cents per gallon for oil, would make \$650,414.40. It is believed, however, that a reduction of approximately 75 per cent can be made, and that the amount estimated for (\$160,000) will be sufficient.

Date, December 12, 1918. Estimate made by E. M. B.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 356.

RAW MATERIALS DIVISION.

*Appropriation:* Maintenance Army War College.      *Item name:* Fuel for Army War College.

Maintenance: Requirements, 800 tons.

Total requirements, 800 tons.

Cost BASIS:	Net requirements.....tons..	800
\$6	Total cost of net requirements.....	\$4,800

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Based on actual consumption for fiscal year 1918 (806 tons).

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Based on average cost of coal purchased for this purpose during fiscal year 1918.

Date, December 12, 1918. Estimate made by E. M. B.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 229f.

RAW MATERIALS DIVISION.

*Appropriation:* Transportation of the Army and its supplies. *Item name:* Gasoline  
for automobiles.

Maintenance: Requirements, 8,230,092 gallons.

Total requirements, 8,230,092 gallons.

<b>COST BASIS:</b>	Net requirements.....gallons..	8, 230, 092
\$0.24.	Total cost of net requirements.....	\$1, 975, 222. 08

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Current market price.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

Estimated that there will be practically none on hand, as purchases are made for immediate delivery of current requirements.

## 5. REMARKS:

Based on attached table, requirements on war basis for a field army of 24 divisions would be 11,571,912 gallons, but a reduction of 50 per cent is made on account of probable reduction in equipment, and a further reduction of 25 per cent on account of probable reduction in mileage, making the requirements 4,339,467 gallons. To this is added 3,890,625 gallons to cover estimated requirements of unattached motors in the United States, being a 75 per cent reduction from the estimated requirements on war basis. Estimate based on information submitted by Motor Transportation Corps.

Date, December 12, 1918. Estimate made by E. M. B.

Address reply to  
Chief, Motor Transport  
Corps, Washington, D. C.

WAR DEPARTMENT,  
OFFICE OF THE MOTOR TRANSPORT CORPS,  
*Washington, November 25, 1918.*

From: The Chief, Motor Transport Corps.

To: Director of Purchase and Storage (Raw Materials Division)  
(attention of Col. George E. Warren).Subject: M. T. C. Oil and Gasoline Requirements, fiscal year 1920.  
Revised figures fiscal year 1919.

1. Estimates for 1919 as submitted called for 152,571,755 gallons of gas and 10,680,025 gallons of oil and grease.

It is estimated that these requirements will be reduced to approximately 100,000,000 gallons of gas, and 7,000,000 gallons of oil and grease. The cut in oil and gas is principally due to reduced amount of equipment and not to reduced use, as it is thought that the Motor Transport Corps will be actively engaged during the period of the armistice and during demobilization.

2. Estimate for 1920: Based on 1919 war figures, one army of 30 divisions in the field consumed 92,544,861 gallons gas per year and 6,478,040 gallons oil and grease.

One army of 24 divisions would consume 74,035,896 gallons of gas and 5,182,512 gallons of oil and grease.

These figures are war figures in the field and would transport one army or its equivalent 5,066 miles per year.

In view of the fact that the new army will only be a skeleton army with 500,000 men to 24 divisions, it is evident that this figure can be cut at least 50 per cent for that reason.

As per 1919 table mileage was figured at from 10,000 for motor-cycle solos to 2,000 for special artillery tractors, this mileage is high. and on a peace basis should be reduced at least 25 per cent.

There was added 10,000,000 gallons for motor convoy service in this country. This item should be entirely eliminated in the 1920 estimate, as it was purely for the purpose of shipping completed equipment from the factory to ports of embarkation under its own power.

There was a further item of 15,562,500 gallons for unattached motors in this country. By 1920 this should be reduced at least 75 per cent.

The following is estimated Motor Transport Corps gas and oil consumption for the fiscal year 1920:

50 per cent of 74,035,896.....	37, 017, 948
75 per cent of 37,017,948.....	27, 762, 461
Total requirements Army 24 divisions (gallons gas).....	27, 763, 461
Motor Convoy Service in United States.....	
Unattached motor in United States.....	
25 per cent of 15,562,500.....	3, 890. 625
Total gasoline requirements (gas).....	31, 654, 086
Oil and grease being 7 per cent of bulk in gasoline (oil and grease).....	2, 215, 716

By authority of the Chief, Motor Transport Corps:

GEORGE P. SMITH, *Capt. M. T. C.*

*Statement showing requirements of gasoline and lubricants for motor vehicles pertaining to 1 field army.*

Type of vehicle.	Number of cars.	Miles per gallon.	Yearly mileage.	Total gas per car.	Total gas required, all cars.
Ambulances:					
A. Light.....	1, 930	10	8, 000	800	1, 544, 000
B. Heavy.....	5, 175	6	8, 000	1, 333	6, 808, 275
Motorcycles:					
Side cars.....	28, 172	30	8, 000	266	7, 493, 752
Solos.....	2, 252	33	10, 000	300	675, 600
Motor cars:					
A. Light.....	5, 540	15	8, 000	533	2, 952, 820
B. Medium, open.....	1, 165	12	8, 000	666	775, 800
C. Medium, closed.....	777	10	7, 000	700	543, 900
D. Heavy, open.....	497	8	8, 000	1, 000	497, 000
E. Heavy, closed.....	940	6	8, 000	1, 333	1, 253, 020
Motor trucks:					
A. Light delivery.....	3, 765	15	8, 000	533	2, 006, 745
B. Light repair.....	1, 408	10	4, 000	400	563, 200
C. Class AA.....	2, 608	6	8, 000	1, 000	2, 608, 000
D. Class A.....	7, 763	5	4, 000	800	6, 210, 400
E. Class B.....	21, 864	3½	4, 000	1, 143	24, 990, 552
4-wheel drive.....	19, 436	3	4, 000	1, 333	25, 908, 188
Tractors:					
4-wheel drive.....	5, 000	3	4, 000	1, 333	6, 665, 000
4-wheel drive.....	943	3	2, 500	833	785, 519
2-wheel drive.....	173	2	2, 000	1, 000	173, 000
Total gasoline per army of 30 divisions:					
Per year.....					92, 544, 861
Per month.....					7, 712, 070
Per division per year.....					3, 084, 829

Lubricating oil and grease figured at 7 per cent of bulk of gasoline.

Above table shows for one army—combat and noncombat—consumption of 5.13 gallons of gasoline per man per month. This compares with A. E. F. recent estimate from tables of experience of 5 gallons per man per month.

Above furnished by Motor Transport Corps, October 5, 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 229.

RAW MATERIALS DIVISION.

*Appropriation:* Transportation of the Army and its supplies.  
for trucks.

*Item name:* Gasoline

Maintenance: Requirements, 20,973,177 gallons.

Total requirements, 20,973,177 gallons.

COST BASIS:	Net requirements.....gallons..	20, 973, 177
\$0.24.	Total cost of net requirements.....	<u>\$5, 033, 562. 48</u>

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Current market price.

## 3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

Estimated that there will be practically none on hand, as purchases are made for immediate delivery of current requirements.

## 5. REMARKS:

Based on attached table, requirements on war basis for a field army of 24 divisions would be 55,928,472 gallons, but a reduction of 50 per cent is made on account of probable reduction in equipment, and a further reduction of 25 per cent on account of probable reduction in mileage, making the requirements 20,973,177 gallons. Estimate based on information submitted by Motor Transport Corps.

Date, December 12, 1918. Estimate made by E. M. B.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 229n.

RAW MATERIALS DIVISION.

*Appropriation:* Transportation of the Army and its supplies.  
for motorcycles.

*Item name:* Gasoline

Maintenance: Requirements, 2,450,799 gallons.

Total requirements, 2,450,799 gallons.

Cost BASIS:	Net requirements.....gallons..	2, 450, 799
\$0.24.	Total cost of net requirements.....	\$588, 191. 76

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2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Current market price.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:  
Estimated that there will be practically none on hand, as purchases are made  
for immediate delivery of current requirements.

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

5. REMARKS:

Based on attached table, requirements on a war basis for a field army of 24 divisions would be 6,535,464 gallons, but a reduction of 50 per cent is made on account of probable reduction in equipment and a further reduction of 25 per cent on account of probable reduction in mileage, making the requirements 2,450,799 gallons. Estimate based on information submitted by Motor Transport Corps.

Date, December 12, 1918. Estimate made by E. M. B.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F. 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. A229.

RAW MATERIALS DIVISION.

*Appropriation:*                      *Item name:* Gasoline for aeroplanes.

Maintenance: Requirements, 10,816,000 gallons.

Total requirements, 10,816,000 gallons.

Cost Basis:	Net requirements.....gallons..	10, 816, 000
\$0.33.	Total cost of net requirements.....	\$3, 569, 280

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Current market price.

## 5. REMARKS:

Estimate based on requirements as indicated in letter from Director of Military Aeronautics, as per copy attached.

Date, January 6, 1919. Estimate made by Nold.

JANUARY 4, 1919.

Director of Military Aeronautics.

Chief of Finance Section, Purchase, Storage and Traffic Division of General Staff.

Gasoline and oil required by the Division of Military Aeronautics' during the fiscal year 1919-20.

1. A recent memorandum of this subject was submitted to your office stating that the requirements of gasoline and oil for this division during the fiscal year 1919-20 would be 7,000,000 gallons of gasoline and 500,000 gallons of oil.

2. These figures should be changed to the following: 10,816,000 gallons of gasoline and 901,333 gallons of oil.

The above change is necessary in view of the fact that it has recently been learned that this division will use a larger number of multiengined airplanes and airplanes using Liberty motors than was previously estimated, due to the fact that a number turned over to the Post Office Department are being returned to this division, and, furthermore, a greater number will be obtained from overseas.

FOR MAJ. GEN. KENLY:

L. H. DRENNAN,

Lieutenant Colonel, Air Service, Assistant Executive.

JANUARY 3, 1919.

## Memorandum for Chief of Finance Section, Purchase, Storage and Traffic Division of General Staff:

1. The only program for operation of the Air Service during the fiscal year 1919-20 which possesses any degree of authority is that submitted to the General Staff and showing a total strength of 24,000.

2. Based on the above program, the Division of Military Aeronautics submits the following estimate of operation during the fiscal year 1919-20:

Number of airplanes that will be flown each day.....	700
Number of hours that each airplane will be flown.....	4
Total number of flying hours per day.....	2,800
Number of days flying per week.....	5
Number of hours flying per week.....	14,000
Number of hours flying per month.....	56,000

The 700 airplanes shown above may be considered divided into the various types approximately as follows:

JN-4-D.....	250
JN-4-H or JN-6-H.....	100
DH-4.....	80
SE-5, VE-7, S-4-C, Spads, or Nieuports.....	100
Handley-Pages, Martin bombers, and similar types.....	35
Water types.....	135
Number of officers necessary to operate above.....	1,989
Number of enlisted men necessary to operate above.....	22,011

For MAJ. GEN. KENLY:

W. E. GILLMORE,  
Colonel, A. S. A.,  
*Chairman Committee on  
Air Service Operations in Peace Times.*



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 229f.

RAW MATERIALS DIVISION.

*Appropriation:* Transportation of the Army and its supplies. *Item name:* Lubri-  
cants for automobiles.

Maintenance: Requirements, 576,106 gallons.

Total requirements, 576,106 gallons.

COST BASIS:	Net requirements.....gallons..	576,106
\$0.44.	Total cost of net requirements.....	<u>\$253,486.64</u>

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Current market price.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

Estimated that there will be practically none on hand, as purchases are made  
for immediate delivery of current requirements.

5. REMARKS:

Requirements estimated at 7 per cent of bulk of gasoline. Estimate based on  
information submitted by Motor Transport Corps.

Date: December 12, 1918. Checked, B. Estimate made by EMB.

## ESTIMATE FOR

# EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 229j.

RAW MATERIALS DIVISION.

*Appropriation:* Transportation of the Army and its supplies. *Item name:* Lubri-  
cants for trucks.

Maintenance: Requirements, 1,468,122 gallons.

Total requirements, 1,468,122 gallons.

COST BASIS:	Net requirements.....gallons..	1,468,122
\$0.44.	Total cost of net requirements.....	<u>\$645,973.68</u>

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Current market price.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:

Estimated that there will be practically none on hand, as purchases are made  
for immediate delivery of current requirements.

5. Remarks:

Requirements estimated at 7 per cent of bulk of gasoline. Estimate based on  
information submitted by Motor Transport Corps.

Date: December 12, 1918. Checked, B. Estimate made by EMB.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 229n.

RAW MATERIALS DIVISION.

*Appropriation:* Transportation of the Army and its supplies. *Item name:* Lubri-  
cants for motorcycles.

Maintenance: Requirements, 171,556 gallons.

Total requirements, 171,556 gallons.

COST BASIS:	Net requirements.....	171,556 gallons.
\$0.44.	Total cost of net requirements.....	\$75, 484. 64

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Current market price.

3. GIVE METHOD OF ESTIMATING QUANTITY ON HAND JULY, 1919:  
Estimated that there will be practically none on hand, as purchases are made  
for immediate delivery of current requirements.

5. REMARKS:  
Requirements estimated at 7 per cent of bulk of gasoline. Estimate based on  
information submitted by Motor Transport Corps.

Date, December 12, 1918. Checked, B. Estimate made by EMB.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. A229.

RAW MATERIALS DIVISION.

*Appropriation:* *Item name:* Lubricants for aeroplanes.

Maintenance: Requirements, 901,333 gallons.

Total requirements, 901,333 gallons.

	Deductions:	
COST BASIS:	Net requirements.....	901,333 gallons.
\$0.49.	Total cost of net requirements.....	\$441, 653. 17

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Current market price.

5. REMARKS:  
Estimate based on requirements as indicated in letter from Director of Military  
Aeronautics, as per copy attached.

Date, January 6, 1919. Checked by ———. Estimate made by Nold.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 121a.

RAW MATERIALS DIVISION.

*Appropriation:* Regular supplies.      *Item name:* Appliances for handling fuel.

Maintenance: Strength, 500,000.

COST BASIS:      Total cost of net requirements..... \$90,000.00  
\$0.18.

## 2. STATE THE SOURCE OF METHOD OF DETERMINING COST BASIS:

Based on per capita cost (\$0.18) for fiscal year 1917.

## 3. REMARKS:

This item covers purchase of wood-sawing apparatus, coal-handling devices, shovels, axes, etc., for handling and preparation of fuel.

Date, December 12, 1918. Checked by——. Estimate made by E. M. B.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

FORM F 2. GROUP No. 27.

**WAR DEPARTMENT.****CONSTRUCTION DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 121b.

*Item name:* Heat, purchase of.*Appropriation:* Regular supplies.

Total estimated cost: \$646,330.

Total required: \$646,330.

**Explanation:**

This is the same amount that was included in the appropriation made in the regular Army bill for the fiscal year 1919.

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**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

FORM F 2. GROUP No. 27.

**WAR DEPARTMENT.****CONSTRUCTION DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 122.

*Item name:* Light, electric current, purchase of.*Appropriation:* Regular supplies.

Total estimated cost: \$8,704,500.

Total required: \$8,704,500.

**Explanation:**

This is the same amount that was asked for and appropriated for the fiscal year 1919, with no definite information as to just what camps and posts are to be maintained at full capacity. It is impossible to make more than an approximate estimate for the amount required for this item. It is considered probable that at some points where the Government is manufacturing the current at plants installed on the ground that the difficulty of getting competent men to handle the equipment may render it desirable to purchase current at points that are now manufacturing it themselves.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 122-a.

RAW MATERIALS DIVISION.

*Appropriation:*                      *Item name:* Mineral oil, purchase of.

Maintenance: Strength, 500,000.

COST BASIS:      Total cost of net requirements. . . . . \$310,000  
\$0.62.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Per capita cost fiscal year 1917.

5. REMARKS:  
    Based on per capita cost (62 cents) for fiscal year 1917.

Date, December 12, 1918.    Checked, B.    Estimate made by EMB.

FORM F 2. Group No. 11.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 122c.

*Item name:* Illuminating supplies for oil lamps.

*Appropriation:* Regular supplies.

Total estimated cost: \$69,320.

Total required: \$69,320.

**Explanation:**

The amount appropriated under this item for the fiscal year 1919 was \$34,660. Owing to the increased cost of materials, double this amount is asked for the year 1920, or a total of \$69,320.

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FORM F 2. Group No. 11.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 122d.

*Item name:* Illuminating supplies for electric and gas lighting.

*Appropriation:* Regular supplies.

Total estimated cost: \$795,790.

Total required: \$795,790.

**Explanation:**

Owing to the increased cost of labor and material which particularly affects this item, an amount 50 per cent in excess of the amount appropriated for the fiscal year 1919 is requested.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 122e.***Item name:* Incandescent lamps.*Appropriation:* Regular supplies.**Total estimated cost: \$202,500.****Total required: \$202,500.****Explanation:**

The appropriation for the fiscal year 1919 was \$162,000. Owing to the increased cost of material, while taking into consideration the fact that the number of men who will occupy the post will be reduced very materially, an advance of 25 per cent, making a total of \$202,500, is required.

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FORM F 2. Group No. 3.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 122f.***Item name:* Installing and extending lighting systems.*Appropriation:* Regular supplies.**Total estimated cost: \$1,500,000.****Total required: \$1,500,000.****Explanation:**

There was included in the Regular Army bill for the fiscal year 1919 the sum of \$11,088,055. The amount asked for at the present time is \$1,500,000. This is to cover extensions to existing plants to accommodate such new construction as may be found necessary.

FORM F 2. Group No. 11.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 122g.

*Item name:* Repairs to lighting plants and systems.

*Appropriation:* Regular supplies.

Total estimated cost: \$1,021,867.

Total required: \$1,021,867.

**Explanation:**

The amount included in the Regular Army bill, fiscal year 1919, was \$681,245. This has been increased by 50 per cent on account of increased cost of labor and material, while taking into consideration the fact that a smaller proportion of the plants will be in operation during the year 1920 than during the year 1919.



## ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

**FORM F 1.**

**FISCAL YEAR 1920.**

**QUARTERMASTER CORPS.**

**Item No. 124.**

**RAW MATERIALS DIVISION.**

**Appropriation:**

**Item name:** Engine supplies for operation of modern batteries.

**TOTAL COST OF NET REQUIREMENTS..... \$20,000**

5. REMARKS:

**Based on cost for the fiscal year 1917 (\$16,046.48), the increased amount being required to provide for new installations.**

Date, December 12, 1918. Estimate made by E. M. B.

**FORM F 2. GROUP No. 3.**

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR CORPS.****CONSTRUCTION DIVISION.**

ANNUAL ESTIMATE, FISCAL YEAR 1920.

Item No. 125.

*Item name:* Post bakeries, construction.*Appropriation:* Regular supplies.

Total estimated cost: \$250,000.

Total required: \$250,000.

**Explanation:**

It is contemplated that very little new material will be required to cover this item, but that the expenditure will be limited to the cost of taking such machinery as may be on hand and installing it in such new locations as may be selected, with a view to permanent or semipermanent use.

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FORM F 2. GROUP No. 11.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR CORPS.****CONSTRUCTION DIVISION.**

ANNUAL ESTIMATE, FISCAL YEAR 1920.

Item No. 125a.

*Item name:* Post bakeries, repair of.*Appropriation:* Regular supplies.

Total estimated cost: \$120,445.

Total required: \$120,445.

**Explanation:**

This amount has been increased by 50 per cent over the amount included in the appropriation for the fiscal year 1919 on account of the increased cost of material and labor.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 126.

GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Bake ovens and apparatus pertaining thereto  
(purchase of, construction of).

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.6961 per capita.....	\$348, 050

Total requirements..... \$348, 050  
Total cost of net requirements..... 348, 050

\* "Working basis" is the quantity required per man or per unit for stated period,  
or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated.

CHECKED BY B. H. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 126a.

GENERAL SUPPLIES DIVISION.

Appropriation. Item name: Bake ovens and apparatus (repair of).

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.00222 per capita.....	\$1, 110

Total requirements..... \$1, 110  
Total cost of net requirements..... 1, 110

\* "Working basis" is the quantity required per man or per unit for stated period,  
or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated.

CHECKED BY B. H. B.

FORM F 2. Group No. 3.

## **ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE, FISCAL YEAR 1920. Item No. 127.**

*Item name:* Ice machines (purchase and installation of).

*Appropriation:* Regular supplies.

**Total estimated cost: \$100,000. Total required: \$100,000.**

### **Explanation:**

The amount of \$100,000, included under this item, is intended to cover the transfer and consolidation of plants that may be abandoned at some temporary post and moved to some camp or reservation that is to be permanently maintained.

FORM F 2. Group No. 11.

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## **ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE, FISCAL YEAR 1920. Item No. 128.**

*Item name:* Maintenance of ice machines.

*Appropriation:* Regular supplies.

**Total estimated cost: \$811,515.**

**Total required: \$811,515.**

### **Explanation:**

This is the amount required to keep such of the ice machines as may be necessary in operation, and to maintain them at the full efficiency. It is contemplated that a considerable portion of the material needed to repair this class of machinery will be obtained from the plants which will probably be abandoned.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 130.

SUBSISTENCE DIVISION.

Appropriation: Regular supplies.      Item name: Ice for issue to troops.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	1 pound per man per day, 366 days..	183,000,000

Total requirements..... 183,000,000

Cost Basis:      Net requirements..... 183,000,000  
 \$0.35 per 100      Total cost of net requirements..... \$640,500  
 pounds.

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Based on 1 pound per man per day.

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
 Army Regulations call for:  
 Detachments of 24 or under: 4 pounds per man per day.  
 Detachments of 25 or 100: 100 pounds per organization per day.  
 Detachments of over 100: 1 pound per man per day.

## 5. REMARKS:

For troops stationed north of the thirty-seventh parallel of north latitude, and where from any cause it is impracticable to cut and store ice for their use, the allowance will be for seven months only, beginning April 1 and ending October 31, except in the States of Washington, Oregon, and Idaho, where during the remainder of the year one-half of such allowance may be issued, and in the State of California, where the full allowance may be issued for the entire year.

To troops stationed south of the thirty-seventh parallel of north latitude the full allowance may be issued for the entire year.

At posts where it is practicable during the cold season to cut and store ice required, no issues of ice will be allowed from funds of the Quartermaster Corps as long as such stored ice is available.

Ice is issued to all enlisted men, and Army Regulations regarding same are embodied in section 10, paragraph 1215.

When ice plants are operated by the Quartermaster Corps the issues of ice are made upon requisitions approved by the commanding officer, and not supplied by purchase.

FORM F 2. GROUP No. 3.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 133.

*Item name:* Laundries, construction of.*Appropriation:* Regular supplies.

Total estimated cost: \$1,200,000.

Total required: \$1,200,000.

**Explanation:**

Laundry facilities at the present time are provided at nearly all camps and cantonments in such quantity as to fully serve the needs of the contemplated number of men which are expected to comprise the military forces. This item is intended to cover the reinstallation of such machinery as can be made available for permanent use at points that are to be continually maintained as posts.

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FORM F 2. GROUP No. 11.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 133a.

*Item name:* Laundries, repair of, not including operation and maintenance.*Appropriation:* Regular supplies.

Total estimated cost: \$1,253,335.

Total required: \$1,253,335.

**Explanation:**

This item shows an increase of 50 per cent over the amount included in the estimate for the fiscal year 1919, and is due to the increased cost of labor and material, due consideration being given to the fact that a certain amount of material for repairs will probably be obtained from plants that will no longer be needed if the contemplated program is adhered to.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 134.

SALVAGE DIVISION.

Appropriation: Item name: Laundries, operation.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	See below.....	500,000

Total cost of net requirements..... \$635,020

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
See below.

5. REMARKS:  
Cost based on records for camps laundries in the United States as shown in attached sheet as follows:  
(1) Supplies and material, \$0.1056 per man per month or \$1.267 per year.  
(2) Fuel not calculated.  
(3) Total operating expense, \$5.971 per year per man in service.

Cost of materials, supplies, and miscellaneous expense for operation of eight laundries during the months of August, September and October, 1918.

Laundry.	Average strength.	Average material and supplies.
Custer.....	33,003	\$3,802.04
Funston.....	51,565	7,382.74
Jackson.....	41,311	2,288.63
Meade.....	43,027	7,109.29
Taylor.....	44,503	1,466.64
Travis.....	33,937	6,549.80
Upton.....	36,689	1,153.45
Jefferson Barracks.....	5,867	903.68
Total.....	289,902	30,656.27

Average cost per man per month, \$0.1056, or \$1.2672 per year.

Civilian pay roll charge for eight laundries during months of August, September, and October, 1918.

Laundry.	Average strength.	Average Amount.
Custer.....	33,003	\$13,920.92
Funston.....	51,565	24,092.49
Jackson.....	41,311	13,986.29
Taylor.....	44,503	8,247.92
Travis.....	33,937	21,710.12
Upton.....	36,689	10,458.92
Meade.....	43,027	18,734.80
Jefferson Barracks.....	5,867	2,592.04
Total.....	289,902	113,743.50

Average cost per man per month, \$0.392, or \$4.704 per year.

Fuel.

[Working basis computed from reports of operation of laundries at posts and camps as indicated below for the months of August, September, and October, 1918.]

	Average strength.	Average coal consumed.	Average cost.
Camp Custer, Mich.....	33,003	294	\$1,753.89
Camp Dix, N. J.....	48,904	180	1,005.42
Camp Funston, Kans.....	51,565	504	2,911.76
Camp Jackson, S. C.....	41,311	311	1,695.50
Camp Lee, Va.....	50,419	147	99.50
Camp Meade, Md.....	43,027	382	1,933.74
Camp Taylor, Ky.....	44,503	222	1,408.93
Camp Travis, Tex.....	33,987	242	1,220.25
Columbus Barracks, Ohio.....	2,854	24	127.75
Jefferson Barracks, Mo.....	5,867	120	481.78
Total.....	355,390	2,426	13,530.52
Cost per capita per month.....			.03807
Cost per capita per year.....			.45684

The price of coal used as the cost basis is the average advised by fuel and forage, \$6.75 per ton.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 137.

SUBSISTENCE DIVISION.

Appropriation: Regular supplies. Item name: Soap, issue.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	4 pounds for each 100 rations, 366 days.	7,320,000

Total requirements.....	7,320,000
Cost Basis: Net requirements.....	7,320,000
\$0.08 per lb. Total cost of net requirements.....	\$585,600

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Quantity based on Army Regulations.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on actual cost.

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:  
The supplies purchased under this item consist of such soap as may be required for issue to the Army, as provided for in paragraph 1215, Army Regulations, 1913. Issues are authorized to organizations of enlisted men as follows: For each ration, 0.64 ounce.

5. REMARKS:  
Under this item soap is also used for washing the laundry of enlisted men and in kitchens. A special allowance is usually authorized for guardhouse and military prisons, such amounts as are requested are authorized by the commanding officer.

Date, November 25, 1918.

The supplies purchased under this item include soap for issue in bakeries and for use of prisoners in guardhouses and military prisons in such quantities as the commanding officer may order as necessary.

In addition to the allowance of 4 pounds per 100 rations, in active campaign, 0.25 of an ounce, hand soap, is issued for each ration to troops in the field in ounce cakes.

The issue of 4 pounds per 100 rations is for kitchen and laundry purposes of the enlisted men.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 137.

GENERAL SUPPLIES DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Soap, flash, mch.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.576 per 1,000 men per year.....	288

Total requirements.....	288
Cost Basis: Net requirements.....	288
\$0.12. Total cost of net requirements.....	\$34.56

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 288 Flash mch. soap, as initial supply for Engr. Tr. of 500,000 men.

## 2 STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 139.

GENERAL SUPPLY DIVISION.

Appropriation: Item name: Furniture, post school, and libraries.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.00074 per capita.....	\$370

Total requirements.....	\$370
Total cost of net requirements.....	370

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimated.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Estimated.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 140.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Textbooks, post schools, and libraries.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.00148 per capita.....	\$740
Total requirements.....			\$740
Total cost of net requirements.....			740

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 141.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Paper for post schools and libraries.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.000042 per capita.....	\$21
Total requirements.....			\$21
Total cost of net requirements.....			21

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated.

Checked by B. H. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 142.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Equipment for Post Schools and Libraries.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.0785 per capita.....	\$39, 250

Total requirements..... \$39, 250  
Total cost of net requirements..... 39, 250

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated.

Checked by VH.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 143

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Instruments, Officers' Schools.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.00074 per capita.....	\$370

Total requirements..... \$370  
Total cost of net requirements..... 370

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 141

GENERAL SUPPLIES DIVISION.

*Appropriation:**Item name:* Furniture, officers' schools.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	\$0.002294 per capita . . . . .	\$1, 147

Total requirements . . . . . \$1, 147  
 Total cost of net requirements . . . . . 1, 147

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Estimated.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Estimated.

## ESTIMATE FOR

# EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 146.

GENERAL SUPPLIES DIVISION.

*Appropriation:**Item name:* Officers' schools—Other authorized articles.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	\$0.000592 per capita . . . . .	\$296

Total requirements . . . . . \$296  
 Net requirements . . . . . 296  
 Total cost of net requirements . . . . . 296

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Estimated.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Estimated.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

OFFICE OF DIRECTOR OF PURCHASE AND STORAGE.

Item No. 147.

ADMINISTRATIVE DIVISION.

*Appropriation:* General appropriations, Quartermaster Corps (Regular supplies).  
*Item name:* Commercial newspapers.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	Cost for fiscal year 1918.....	\$7,500
Total cost of net requirements.....			\$7,500

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 5. REMARKS:

The act approved July 9, 1918 (Army appropriation act), under "Regular supplies, Quartermaster Corps," provides for the furnishing of commercial newspapers and market reports for use in connection with the procurement of subsistence supplies, etc., for the Army. Based on actual expenditures for the first nine months of the fiscal year 1918, it is estimated that the above amount will be required.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

OFFICE OF DIRECTOR OF PURCHASE AND STORAGE.

Item No. 148a.

ADMINISTRATIVE DIVISION.

*Appropriation:* General appropriations. Quartermaster Corps (Regular supplies).  
*Item name:* Newspapers and periodicals.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	Allowance of regiment.....	\$11,880
Total cost of net requirements.....			\$11,880

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 5. REMARKS:

As authorized by the act approved July 9, 1918 (Army appropriation act), and based on the allowance of \$90 for a regiment, provided for in Quartermaster General's Office. Circular No. 18, 1918, it is estimated that the above amount will be required.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 149.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Tableware for kitchens and mess halls.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$2.530 per capita.....	\$1, 265, 000

Total requirements.....	\$1, 265, 000
Net requirements.....	1, 265, 000
Total cost of net requirements.....	1, 265, 000

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimated.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DEPARTMENT. Item No. 151.

SUBSISTENCE DIVISION.

Appropriation: Regular supplies. Item name: Oats for horses.

	Strength.	Working basis.*	Requirements.
			<i>Pounds.</i>
Maintenance.....	71, 500	366 days, at 12 pounds per day....	314, 028, 000

Total requirements.....pounds.. 314, 028, 000

Cost Basis: Net requirements.....pounds.. 314, 028, 000  
 2.3 cents. Total cost of net requirements..... \$7, 222, 644

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Fixed by Army Regulations at 12 pounds per day.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Price taken from prevailing market, October 1, 1918. (73 cents and 74 cents per bushel for standard white oats.)

5. REMARKS:

The General Staff estimates that there will be 71,500 horses and 48,400 mules on hand for the entire fiscal year 1920.



ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DEPARTMENT.   Item No. 151.

SUBSISTENCE DIVISION.

Appropriation: Regular supplies.      Item name: Oats for mules.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	48,400	366 days, at 9 pounds per day . . . . .	<i>Pounds.</i> 159,429,600

Total requirements.....pounds..159,429,600

Cost BASIS:    Net requirements.....pounds..159,429,600

2.3 cents.      Total cost of net requirements.....\$3,666,880.80

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Fixed by Army Regulations at 9 pounds per day.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Price taken from prevailing market, October 1, 1918 (73 cents, and 74 cents per bushel for standard white oats).
5. REMARKS:  
The General Staff estimates that there will be 71,500 horses and 48,400 mules on hand for the entire fiscal year 1920.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DEPARTMENT. Item No. 151.

SUBSISTENCE DIVISION.

Appropriation: Regular supplies. Item name: Hay.

	Strength.	Working basis.*	Requirements.
Maintenance.....	{ 92,400 27,500	366 days, at 14 pounds per day.... 366 days, at 17 pounds per day....	473,457,600 171,105,000
Total requirements.....			644,562,600
Cost Basis: Net requirements.....			644,562,600
\$0.1½ cents. Total cost of net requirements.....			\$9,668,439.00

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

- STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Fixed by Army Regulations at 14 pounds for horses and 17 pounds per day for Field Artillery horses of the heavy draft type.
- STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Price taken from prevailing market, October 1, 1918 (\$30.00 at \$31.00 per ton for No. 2 timothy).
- REMARKS:  
The General Staff estimates that there will be 44,000 Cavalry horses, 27,500 draft horses, and 48,400 mules on hand for the entire fiscal year 1920.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DEPARTMENT. Item No. 152.

SUSSTENCE DIVISION.

Appropriation: Regular supplies.

Item name: Salt for animals.

	Strength.	Working basis.*	Requirements.
			<i>Pounds.</i>
Maintenance . . . . .	119,900	0.8 oz. per day for 366 days . . . . .	2,194,170

Total requirements . . . . . pounds.. 2,194,170

Cost Basis: Net requirements . . . . . pounds.. 2,194,170

\$0.75 per 100 lbs. Total cost of net requirements . . . . . \$16,466.28

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Actual number of days for which salt will be required. Allowance of 0.8 oz. per day, fixed by Army Regulations.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Actual cost.

## 5. REMARKS:

The General Staff estimates that there will be 71,500 horses and 48,800 mules on hand for the entire fiscal year 1920.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DEPARTMENT. Item No. 153.

## SUBSISTENCE DIVISION.

*Appropriation:* Regular supplies.*Item name:* Vinegar for animals.

	Strength.	Working basis.*	Requirements.
			<i>Gallons.</i>
Maintenance.....	119,900	0.1 gill per day, 366 days.....	137,136

Total requirements.....gallons.. 137,136

Cost BASIS: Net requirements.....gallons.. 137,136  
 \$0.32 per gal. Total cost of net requirements..... \$43,883.52

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Actual number of days for which vinegar will be required. Allowance of 0.1 gill per day fixed by Army Regulations.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Actual cost.
5. REMARKS:  
 The General Staff estimates that there will be 71,500 horses and 48,800 mules on hand for the entire fiscal year 1920.

**ESTIMATES FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DEPARTMENT. Item No. 154.

SUBSISTENCE DIVISION.

Appropriation: Regular supplies. Item name: Bedding in kind for animals.

	Strength.	Working basis.*	Requirements.
Maintenance.....	119,900	366 days, @ 100 lbs. per mo.....	143,880,000

Total requirements..... 143,880,000

COST BASIS: Net requirements..... 143,880,000  
 ½ cent Total cost of net requirements..... \$719,400

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Fixed by Army Regulations at 100 pounds per month.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Price taken from prevailing market, October 1, 1918. (\$9.50 and \$11.50 per ton for straw.)

## 3. REMARKS:

The General Staff estimates that there will be 71,500 horses and 48,400 mules on hand for the entire fiscal year, 1920.

ESTIMATES FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 155.

SUBSISTENCE DIVISION.

Appropriation: Regular supplies.      Item name: Seeds for raising forage.

Initial equipment.	Strength.	Working basis.*	Requirements.
Maintenance.....	.....	.....	.....

COST BASIS:  
\$.....      Net requirements.....  
Total cost of net requirements..... \$40,000

\* "Working basis" is the quantity required for man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS.  
Based on cost for nine months of the fiscal year 1918 (\$33,476.43).

2. REMARKS:  
Estimated as required to purchase necessary seeds for raising forage. These seeds are for use in three permanent Remount Depots, Fort Royal, Fort Reno, and Fort Keogh. The quantity of forage to be raised will equal, if not exceed, the quantity raised during the period of the war, as estimated by Remount Division.

DATE: December 12, 1918. Estimate made by E. M. B.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 156.

SUBSISTENCE DIVISION.

Appropriation: Regular supplies.      Item name: Implements for raising forage.

Total cost of net requirements..... \$35,000

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on cost for nine months of the fiscal year 1918 (\$26,781.14).

5. REMARKS:  
Estimated as required to purchase necessary implements for raising forage. The amount required for purchase of implements for raising forage will equal, if not exceed, amount required during the war period, as the quantity of forage to be raised in peace times will be larger.

DATE: December 12, 1918. Estimate made by E. M. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 158.

SUBSISTENCE DIVISION.

Appropriation: Regular supplies.      Item name: Expenses incident to raising forage.

Total cost of net requirements. . . . . \$25,000

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Based on cost for nine months of the fiscal year 1918 (\$20,085.75).

## 5. REMARKS:

Estimated as required to cover expenses, incident to raising forage, such as  
haling hay, sacking oats, etc.

DATE: December 12, 1918. Estimate made by E. M. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE AND STORAGE DEPARTMENT.

Item No. 159.

SUBSISTENCE DIVISION.

Appropriation: Regular supplies.      Item name: Straw for soldiers' bedding.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	30 pounds per man for 3 months . .	45,000,000

Total requirements . . . . .	45,000,000
Cost BASIS:      Net requirements . . . . .	45,000,000
\$0.006.      Total cost of net requirements (\$270,000) . . . . .	\$100,000

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Based on Army Regulations, 30 pounds per man per month.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Price taken from prevailing market, October 1, 1918 (\$11 to \$11.50 per ton).  
The quantity of 45,000,000 pounds, at \$0.006, would amount to \$270,000, but  
it is not believed that this amount will be needed, and, therefore, a flat  
estimate of \$100,000 is submitted.

## 5. REMARKS:

In peace times it is estimated that troops will be in the field for three months  
in the year, at which time straw for their bedding will be required. The  
other nine months of the year it is estimated they will be in garrison, where  
they will not need the straw for bedding.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 160.

GENERAL SUPPLIES DIVISION.

*Appropriation:**Item name:* Supplies, office (stationery).

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$6.039 per capita.....	\$3, 019, 500

Total requirements.....	\$3, 019, 500
Net requirements.....	3, 019, 500
Total cost of net requirements.....	3, 019, 500

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Based on actual purchase of 1918.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

DIRECTOR OF PURCHASE AND STORAGE DEPARTMENT. Item No. 164.

ADMINISTRATIVE DIVISION.

*Appropriation:* General appropriations, Quartermaster Corps (regular supplies).  
*Item name:* Certificate for discharged soldiers.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	Cost for fiscal year 1918.....	\$1, 000

Total cost of net requirements.....	\$1, 000
-------------------------------------	----------

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

This estimate is based on actual cost for the first nine months of the fiscal year 1918, during which period conditions and prices existed which it is contemplated will be similar to those for the fiscal year 1920.

5. REMARKS:

The act approved July 9, 1918 (Army appropriation act, fiscal year 1919), provides for the issue of certificates to discharged soldiers. Based on actual cost for the first nine months of the fiscal year 1918, the above estimated amount will be required.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

DIRECTOR OF PURCHASE AND STORAGE DEPARTMENT.   Item No. 165.

ADMINISTRATIVE DIVISION.

*Appropriation:* General appropriations, Quartermaster Corps (regular supplies).  
*Item name:* Printing.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	Cost for fiscal year 1918.....	\$215,000

Total cost of net requirements..... \$215,000

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
This estimate is based on actual cost for the first nine months of the fiscal year 1918, during which period conditions and prices existed which it is contemplated will be similar to those for the fiscal year 1920.
5. REMARKS:  
The act approved July 9, 1918 (Army appropriation act), under “Regular supplies, Quartermaster Corps,” provides for printing. Based on the actual cost for the first nine months of the fiscal year 1918, it is estimated that the above amount will be required.

QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 178.   Item name: Towels.   Appropriation: Incidental expenses.

Toweling.....	\$10,800.00
Towels, bath.....	215,342.80
Towels, dish.....	2,430.00
Towels, hand.....	15,120.00
Towels, huck.....	225,000.00
Total.....	468,692.80

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 178.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Toweling.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	240 yards per 1,000 men per year..	120,000

COST BASIS: Net requirements..... 120,000  
\$0.09. Total cost of net requirements..... \$10,800

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

5. REMARKS:  
This article is for sale to officers, and the cost price will eventually revert back to the Treasury through collections from sales.

QUARTERMASTER CORPS, CLOTHING AND EQUIPAGE DIVISION.

Item No. 178. Item name: Towels, bath. Appropriation: Incidental expenses.

Quartermaster Corps.....	\$207,000.00
Medical Department.....	8,010.00
Engineers.....	332.80
Total.....	215,342.80

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 178.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Towels, bath.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	1,200 per 1,000 men per year . . . . .	600, 000

Cost Basis: Net requirements . . . . . 600, 000  
\$0.345. Total cost of net requirements . . . . . \$207, 000. 00

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

5. REMARKS:  
This article is for sale to officers, and the cost price will eventually revert back to the Treasury through collections from sales.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 178:

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Previously purchased by Medical Department. Item name: Towels, bath (dozens).

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	100 dozen per 25,000 . . . . .	2, 000

Total requirements . . . . . 2, 000

Cost Basis: Net requirements . . . . . 2, 000  
\$4.005 per doz. Total cost of net requirements . . . . . \$8, 010. 00

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimate based on experience.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 178.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Formerly purchased by Engineers. *Item name:* Towels, bath.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	1.664 per 1,000 men per year.....	832

Total requirements..... 832

Cost BASIS: Net requirements..... 832  
 \$.40. Total cost of net requirements..... \$332.80

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 832 towels, as initial supply for Engr. Tr. of 500,000 men. Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 178.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Previously purchased by Medical Department. *Item name:* Towels, dish, dozens.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	100 for 25,000.....	2,000

Total requirements..... 2,000

Cost BASIS: Net requirements..... 2,000  
 \$1.215 per doz. Total cost of net requirements..... \$2,430.00

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimate based on experience.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 178

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:* Previously purchased by Medical Department.  
hand, dozens.

*Item name:* Towels.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	400 for 25,000 . . . . .	8, 000

Total requirements . . . . . 8, 000

Cost Basis: Net requirements . . . . . 8, 000  
\$1.88 per doz. Total cost of net requirements . . . . . \$15, 120

\* "Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Estimate based on experience.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 178.

CLOTHING AND EQUIPAGE DIVISION.

*Appropriation:**Item name:* Towels, huck.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	3.000 per 1,000 men per year . . . . .	1, 500, 000

Total requirements . . . . . 1, 500, 000

Cost Basis: Net requirements . . . . . 1, 500, 000  
\$0.15. Total cost of net requirements . . . . . \$225, 000

\* "Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Issued on the basis of 2,000 per 1,000 men; estimated life, 8 months; based on  
previous experience.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 199.

GENERAL SUPPLIES DIVISION.

*Appropriation:**Item name:* Shoering.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	\$0.033 per capita.....	\$16, 500

Total requirements..... \$16, 500

Deductions:

Estimated salvage and reclamation..... \$16, 500

Total cost of net requirements..... 16, 500

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Based on actual purchase of 1918.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 121i.

RAW MATERIALS DIVISION.

*Appropriation:* Formerly procured by Engineers.*Item name:* Acid, chromic.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.096 per 1,000 per year.....	<i>Pounds.</i> 48

Total requirements..... pounds.. 48

Deductions:

Cost BASIS: Net requirements..... pounds.. 48

\$1.90. Total cost of net requirements..... \$91. 20

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS.

Authority: Issue tables of C. of E. Initial equipment for Engineer troops of 500 units, 48 pounds; estimated one year's supply.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Acid, muriatic.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance . . . . .	500, 000	0. 23 per 1,000 men per year. . . . .	115

Total requirements. . . . .	pounds..	115
Cost BASIS:      Net requirements. . . . .	pounds..	115
\$0. 25.      Total cost of net requirements. . . . .		\$28. 75

- \* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables of C. of E. Initial equipment for Engineer troops of 500 units, 115 pounds; estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Acid, nitric.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance . . . . .	500, 000	0.24 per 1,000 men per year. . . . .	120

Total requirements. . . . .	pounds..	120
Cost BASIS:      Net requirements. . . . .	pounds..	120
\$0. 27.      Total cost of net requirements. . . . .		\$32. 40

- \* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables of C. of E. Initial equipment for Engineer troops of 500 units, 120 pounds; estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Acid, phosphoric.  
85 per cent.

	Strength.	Working basis.*	Requirements.
			<i>Pounds.</i>
Maintenance.....	500,000	0.096 per 1,000 men per year.....	48

Total requirements.....	pounds	48
Cost BASIS:      Net requirements.....	pounds	48
\$0.70.              Total cost of net requirements.....		\$33.60

- \* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables of C. of E. Initial equipment for Engineer troops of 500 units, No. 48; estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Acid, tannic C. P.

	Strength.	Working basis.*	Requirements.
			<i>Pounds.</i>
Maintenance.....	500,000	0.048 per 1,000 men per year.....	24

Total requirements.....	pounds	24
Cost BASIS:      Net requirements.....	pounds	24
\$1.50.              Total cost of net requirements.....		\$36.00

- \* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables of C. of E. Initial equipment for Engineer troops of 500 units, No. 24; estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****M. & E. M. DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Alidades, glass, open sight, leveling.

	Strength.	Working basis.*	Requirements.
Initial equipment....	500	1.5 per 1,000 men.....	750

**Cost Basis:** Net requirements..... 750  
\$21 Total cost of net requirements..... \$15,750

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. **STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

This material is not in stock and is to be purchased to cover initial issue. Maintenance has already been figured on previous sheets.

2. **STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****M. & E. M. DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Alidades, boxwood, open sight.

	Strength.	Working basis.*	Requirements.
Initial equipment....	500	1.5 per 1,000 men.....	748

**Cost Basis:** Net requirements..... 748  
\$5 Total cost of net requirements..... \$3,740

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. **STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 748 issued as initial supply for Engineer troops with army of 500,000 men.

This material is not in stock and is to be purchased to cover initial issue.

2. **STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 19—.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Albumen, egg.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance . . . . .	500	0.696 per 1,000 men per year . . . . .	48

Total requirements . . . . . pounds.. 48

COST BASIS:      Net requirements . . . . . pounds.. 48  
\$1.40.      Total cost of net requirements . . . . . \$67. 20

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables of C. of E. Initial equipment for Engineer troops of 500 units, 48 pounds; estimated one year's supply.
- 2. STATE THE SOURCE OF METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Alidades.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	1. 24 per 1,000 men per year . . . . .	612

Total requirements . . . . . 612

COST BASIS:      Net requirements . . . . . 612  
\$2.50.      Total cost of net requirements . . . . . \$1, 530

\*"Working basis" is the quantity required per man or per unit stated period, or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 3,061 alidades as initial equipment for Engineer Troops of 500,000 men. Estimated life of equipment, 5 years.
- 2. STATE THE SOURCE OF METHOD OF DETERMINING COST BASIS:  
Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## RAW MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Alum, powdered.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance .....	500,000	0.006 per 1,000 men per year.....	48
Total requirements.....			pounds.. 48
Cost BASIS: Net requirements.....			pounds.. 48
\$0.18. Total cost of net requirements.....			\$8.64

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 48 pounds alum, as initial supply for Engr. tr. of 500,000 men. Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Alidades, brass, open sight.

	Strength.	Working basis.*	Requirements.
Maintenance .....	500,000	0.38 per 1,000 men per year.....	190
Total requirements.....			190
Cost BASIS: Net requirements.....			190
\$23.10. Total cost of net requirements.....			\$4,389.00

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 949 alidades as initial equipment for Engr. tr. of 500,000 men. Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

M. &amp; E. M. DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Alidade, miniature, telescope with declinator.

	Strength.	Working basis.*	Requirements.
Initial equipment....	500	0.79 per 1,000 men.....	395

**COST BASIS:** Net requirements..... 395  
\$145. Total cost of net requirements..... \$57,275

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

This material is not in stock and is to be purchased to cover initial issue.  
Maintenance has already been figured on previous sheets.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Alidades, miniature.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.03 per 1,000 men per year.....	15

Total requirements..... 15

**COST BASIS:** Net requirements..... 15  
\$159.50. Total cost of net requirements..... \$2,392.50

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers; 75 alidades as initial equipment for Engr. Tr. of 500,000 men.  
Basis: Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

M. &amp; E. M. DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Alidades, periscope.

Initial equipment....	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.31 per 1,000 men.....	155

Cost BASIS: Net requirements..... 155  
\$29.70. Total cost of net requirements..... \$4, 603. 50

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 155 issued as initial supply for Engineer troops with Army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Alidades, telescope.

Initial equipment...	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0. 19 per 1,000 men per year.....	95

Total requirements..... 95  
Cost BASIS: Net requirements..... 95  
\$16.50. Total cost of net requirements..... \$1, 567. 50

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 475 Alidades as initial equipment for Emgr. Tr. of 500,000 men.  
Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Alcohol, denatured

	Strength.	Working basis.*.	Requirements.
			Pints.
Maintenance .....	500,000	1.184 per 1,000 men per year.....	592

Total requirements.....	592
Cost BASIS:      Net requirements.....pints..	592
\$0.15.      Total cost of net requirements.....	\$88.80

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 592 pints alcohol as initial equipment for Engineer Troops of 500,000 men. Estimated one year's supply.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by office Chief Signal Officer.      Item name:  
Ammeters, 0-30 watch case, for batt. test.

	Strength.	Working basis.*	Requirements.
Maintenance .....	20 combat div., 4 base div.	0.43 per div. per year.	10

Cost BASIS:      Net requirements.....	10
\$1.71.      Total cost of net requirements.....	\$17.10

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1.79 ammeters, 0-30 watch case for batt. test, issued per div.  
0.43 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price of latest order.

### Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:*  
Barometers, aneroid, Grad. MM. & in.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	2.39 per div. per year..	57

42455			
<b>COST BASIS:</b>	Net requirements . . . . .		57
\$13 ea.	Total cost of net requirements . . . . .		\$741

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
6.62 barometers, aneroid, Grad. MM. & in., issued per div.  
2.39 maintenance per div. per yr. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price of latest order.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:*  
Barometers, mercurial, Grad. MM. & in.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	0.96 per div. per year..	23

5-99			
<b>COST BASIS:</b>	Net requirements . . . . .		23
\$45 ea.	Total cost of net requirements . . . . .		\$1,035

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
2.66 barometers, mercurial, Grad. MM. & in., issued per div.  
0.96 maintenance per div. per yr. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price of latest order.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1. .

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Bakery equipment.

Total cost of net requirements..... \$306,487.91

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

See detailed sheets attached or Appendix No. 1.

## QUARTERMASTER CORPS.

## GENERAL SUPPLIES—BAKERY EQUIPMENT.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require-ments.	Cost basis.	Total cost.
Backs, oven, 2-A (bakery equipment)...	1.152 per 1,000 men per year.....	576	\$17.15	\$9,878.40
Boards, dam for dough troughs, each....	.....do.....	576	.95	547.20
Brushes, bench, each (field bakery equip-ment).	3.456 per 1,000 men per year.....	1,728	.46	794.88
Brushes for greasing loaves, each (field bakery equipment).	.....do.....	1,728	.17	293.76
Chambers, 10-A, each (field bakery equipment).	2.5872 per 1,000 men per year...	1,294	43.90	56,806.60
Chambers, 11-A, each (field bakery equipment).	.....do.....	1,294	30.15	39,014.10
Chambers, 12-A, each (field bakery equipment).	.576 per 1,000 men per year.....	288	25.70	7,401.60
Clamps and chains, sets (field bakery equipment).	.....do.....	288	3.35	964.80
Clocks, alarm, each (field bakery equip-ment).	.852 per 1,000 men per year.....	426	1.00	426.00
Covers, sponge, can 19-A, each (field bakery equipment).	12.072 per 1,000 men per year...	6,036	1.05	6,337.80
Covers, trench, 5-A, each (field bakery equipment).	2.5872 per 1,000 men per year....	1,294	19.61	25,375.34
Fronts, oven, 1-A, each (field bakery equipment).	.576 per 1,000 men per year.....	288	14.27	4,109.76
Lamps, acetylene, each (field bakery equipment).	1.728 per 1,000 men per year.....	864	2.579	2,228.25
Measures, cast, aluminum, gallon, each (field bakery equipment).	.852 per 1,000 men per year.....	426	2.00	852.00
Ovens, field, No. 1, each.....	.5748 per 1,000 men per year.....	287	206.50	59,265.50
Pans, bake, 12 x 24, each (field bakery equipment).	120 per 1,000 men per year.....	60,000	1.10	66,000.00
Pans, oven, 7a, 8a, 9a, K. D., each (field bakery equipment).	3.456 per 1,000 men per year.....	1,728	.83	1,434.24
Scales, bakers, each.....	.576 per 1,000 men per year.....	288	5.80	1,526.40
Scoops, large, aluminum, each (field bakery equipment).	.852 per 1,000 men per year.....	426	1.25	532.50
Scrapers, dough, each (field bakery equipment).	1.728 per 1,000 men per year.....	864	.094	82.08
Sieves, flour, each (field bakery equip-ment).	.852 per 1,000 men per year.....	426	.95	404.70
Thermometers, oven, each (field bakery equipment).	1.728 per 1,000 men per year.....	864	11.00	9,504.00
Tops, oven, 6-A each (field bakery equip-ment).	1.152 per 1,000 men per year.....	576	6.95	4,003.20
Troughs, dough, each (field bakery equipment).	.....do.....	576	12.50	7,200.00
Turners, cake, each (field bakery equip-ment).	10.944 per 1,000 men per year....	5,472	.274	1,504.80
				306,487.91

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Batteries, renewal.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	9.216 per 1,000 men per year.....	4,608
Total requirements.....			4,608
Cost Basis:      Net requirements.....			4,608
\$0.18.            Total cost of net requirements.....			\$829.44

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue tables, Chief of Engineers.  
    Basis: 4,608 batteries as initial supply for Engr. Tr. of 500,000 men. Estimated, one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Banana oil.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.384 per 1,000 men per year.....	192 ounces.
Total requirements .....			(ounces).. 192
Cost Basis:      Net requirements .....			(ounces).. 192
\$0.03.            Total cost of net requirements.....			\$5.76

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue tables, Chief of Engineers.  
    Basis: 192 ounces as initial supply for Engr. Tr. of 500,000 men. Estimated, one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Beam compass.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.09 per 1,000 men per year.....	45
Total requirements.....			45
Cost BASIS: Net requirements.....			45
\$2.20. Total cost of net requirements.....			\$99.00

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 224 Beam compasses as initial equipment for Engineer troops of 500,000 men. Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by office Chief Signal Officer. Item name: Bells, electric vibrating.

	Strength.	Working basis.*	Requirements..
Maintenance.....	20 combat div., 4 base div.	33.50 per div. per year	804

140358.

Cost BASIS: Net requirements.....	804
\$0.45 ea. Total cost of net requirements.....	\$361.80

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

93.58 bells, electric vibrating, issued per div.

33,150 maintenance per div. per yr. Wastage for U. S. training approved by Chief Signal Officer.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Unit price of latest order.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name:  
Bells, vibrating, 50 ohms, or equiv.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	2 per div. per year....	48

Cost Basis:	Net requirements.....	48
\$4.90 ea.	Total cost of net requirements.....	\$235.20

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
9.04 bells, vibrating, 50 ohms, or equiv. issued per div.  
2. Maintenance per div. per yr. Wastage for U. S. training approved by Chief Signal Officer.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Quotation of the National Electrical Supply Co.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name:  
Bells, vibrating, 110 ohms, 150 v.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	1.50 per div. per yr...	36

Cost Basis:	Net requirements.....	36
\$3.00 ea.	Total cost of net requirements.....	\$108.00

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
7 bells, vibrating, 110 ohms, 150 v. issued per div.  
1.50 maintenance per div. per yr. Wastage for U. S. training approved by Chief Signal Officer.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price of latest order.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Beeswax, yellow.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.864 per 1,000 men per year.....	432 ounces.

Total requirements.....	ounces..	432
Cost BASIS: Net requirements.....	ounces..	432
\$0.03. Total cost of net requirements.....		\$12.96

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY OF ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 432 ounces beeswax as initial supply for Engr. Tr. of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Borax.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	2 per 1,000 men per year.....	1,000 pounds.

Total requirements.....	pounds..	1,000
Cost BASIS: Net requirements.....		1,000
\$0.10. Total cost of net requirements.....		\$100

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 1,000 pounds borax, initial supply for Engr. Tr. of 500,000 men. Estimated as 1 year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name:  
Binding posts.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	47 per div. per year...	1, 128

Cost Basis:	Net requirements.....	1, 128
\$0.069 each.	Total cost of net requirements.....	\$77. 83

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
130.66 binding posts issued per div.  
47 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Quotation received by Contract Section.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name:  
Blasting machine.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	0.11 per div. per year..	3

Cost Basis:	Net requirements.....	3
\$15.75.	Total cost of net requirements.....	\$47. 25

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
0.45 blasting machines issued per div.  
0.11 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price of latest order.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1:  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.      Item name:  
Blocks, connecting.

	Strength.	Working basis.*	Requirements.
Maintenance .....	20 combat div., 4 base div.	1 per div. per year....	24
Cost BASIS:	Net requirements.....		24
\$0.20 ea.	Total cost of net requirements .....		\$4. 80

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
3.25 blocks, connecting, issued per div.  
1 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Quotation by the National Electrical Supply Co.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.      Item name:  
Boards, running, 10-wire.

	Strength.	Working basis.*	Requirements.
Maintenance .....	20 combat div., 4 base div.	0.3 per div. per year..	1
Cost BASIS:	Net requirements.....		1
\$4.29 ea.	Total cost of net requirements .....		\$4. 29

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1.25 boards, running, 10-wire, issued per div.  
3 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

MACHINERY AND ENGINEERING MATERIAL DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Board, sketching, with tripod.

	Strength.	Working basis.*	Requirements.
Initial equipment....	500	2.01 per 1,000 men.....	1,005

**COST BASIS:** Net requirements..... 1,005  
\$13.85. Total cost of net requirements..... \$13,919.25

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 1,005 issued as initial supply for Engineer troops with Army of 500,000 men.

This material is not in stock and is to be purchased to cover initial issue.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Boards, stadia, folding.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.536 per 1,000 men per year.....	268

**Total requirements**..... 268  
**COST BASIS:** Net requirements..... 268  
\$13.50. Total cost of net requirements..... \$3,618.00

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 1,339 boards as initial supply for Engineer troops of 500,000 men. Estimated life of equipment, 5 years.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Recent purchases.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Bolts, drift, 1/4".

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	11.12 per 1,000 men per year.....	5, 760

Total requirements.....	5, 760
Cost BASIS:      Net requirements.....	5, 760
\$0. 06.      Total cost of net requirements.....	\$345. 60

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 28,800 bolts, as initial supply for Engr. tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Bolts, drift, 1/4".

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	9.216 per 1,000 men per year.....	4, 608

Total requirements.....	4, 608
Cost BASIS:      Net requirements.....	4, 608
\$0. 10.      Total cost of net requirements.....	\$460. 80

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 23,040 bolts, as initial supply for Engr. tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Box No. 1 for 26''  
axe.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.364 per 1,000 men per year.....	182
Total requirements.....			182
Cost BASIS:      Net requirements.....			182
\$3.25.            Total cost of net requirements.....			\$591.50

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 912 boxes, initial supply for Engr. Tr. of 500,000 men.    Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Box No. 4 for 26''  
saw.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.164 per 1,000 men per year.....	82
Total requirements.....			82
Cost BASIS:      Net requirements.....			82
\$3.00.            Total cost of net requirements.....			\$246.00

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 408 boxes, initial supply for Engr. Tr. of 500,000 men.    Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Box No. 5, for 36''  
SAW.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.124 per 1,000 men per year.....	62
Total requirements.....			62
Cost BASIS:      Net requirements.....			62
\$3.50.      Total cost of net requirements.....			\$217. 00

\*“Working basis” is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 312 boxes, initial supply for Engr. Tr. of 500,000 men.      Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Boxes. cap. Engi-  
neers.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.526 per 1.000 men per year.....	2, 630
Total requirements.....			2, 630
Cost BASIS:      Net requirements.....			2, 630
\$1.05.      Total cost of net requirements.....			\$2, 761. 50

\*“Working basis” is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 13,152 boxes, initial supply for Engr. Tr. of 500,000 men.      Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Boxes. pack. Engi-  
neers' outfit.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.46 per 1.000 men per year.....	230

Total requirements.....	230
Cost BASIS:      Net requirements.....	230
\$9.75.      Total cost of net requirements.....	\$2, 242. 50

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables. Chief of Engineers.  
Bases: 1,152 boxes. initial supply for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Brads, No. 12.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.458 per 1,000 men per year.....	Pounds. 229

Total requirements.....	229
Cost BASIS:      Net requirements.....	229
\$0.08.      Total cost of net requirements.....	\$18. 32

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 229 lbs. brads, initial supply for Engr. tr. of 500,000 men.  
Estimated as 1 year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Brads, No. 14.

	Strength.	Working basis.*	Requirements.
			<i>Pounds.</i>
Maintenance . . . . .	500, 000	0.458 per 1,000 men per year . . . . .	229

Total requirements . . . . .	229
Cost BASIS:      Net requirements . . . . .	229
\$0.09.          Total cost of net requirements . . . . .	\$20. 61

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 229 lbs. brads, initial supply for Engr. tr. of 500,000 men.  
Estimated for 1 year's supply.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Bulbs, electric, Mazda.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	9.216 per 1,000 men per year . . . . .	4, 608

Total requirements . . . . .	4, 608
Cost BASIS:      Net requirements . . . . .	4, 608
\$0.10.          Total cost of net requirements . . . . .	\$460. 80

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 4,608 bulbs as initial supply for Engr. tr. of 500,000 men. Estimated 1 year's supply.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Bulbs, rubber or cable release.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.288 per 1,000 men per year.....	144

Total requirements..... 144

Cost Basis:      Net requirements..... 144  
\$0.25.      Total cost of net requirements..... \$36

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 144 bulbs, initial supply for Engr. tr. of 500,000 men. Estimated as 1 year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer.      Item name: Cable, 2 conductors, lead covered, motors.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	196 per div. per year...	4,704

Cost Basis:      Net requirements..... 4,704  
\$124 per M ft.      Total cost of net requirements..... \$1,924.48

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
163.33 cable, 2 conductors, lead covered, motors, issued per div.  
196 maintenance per div. per yr. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Price taken from previous orders.  
Estimate made by E. R. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer. Item name:  
Cable, 3 pr. lead covered, ft.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.....	706.2 per div. per year	16, 949

Cost BASIS:	Net requirements.....	16, 949
\$105 per M ft.	Total cost of net requirements.....	\$1, 779. 65

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
588.5 cable, 3 pr. lead covered, ft., issued per div.  
706.2 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Taken from previous orders.  
Estimate made by V. H.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer. Item name:  
Cable, 10 pr. Ferrin cir. loom, ft.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	124 per div. per year..	2, 976

Cost BASIS:	Net requirements.....	2, 976
\$0.40 per ft.	Total cost of net requirements.....	\$1, 190. 40

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
51.66 cable, 10 pair, Ferrin cir. loom, ft. issued per div.  
124 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Price taken from previous orders.  
Estimate made by E. N. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer. Item name: Cable rollers.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	0.14 per div. per year..	3
Cost Basis: Net requirements..... 3			
\$1.38 ea. Total cost of net requirements..... \$4.14			

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
0.58 cable rollers issued per div.  
0.14 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.  
Estimate made by E. N. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Camera, auto-graphic 3A Kodak, with case.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	0.06 per 1,000 men per year.....	30
Total requirements..... 30			
Cost Basis: Net requirements..... 30			
\$21.54. Total cost of net requirements..... \$646.20			

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 152 cameras, initial supply for Engr. tr. of 500,000 men.  
Estimated life of equipment, 5 years.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.



ESTIMATE FOR

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Camera 3A Graflex,  
with case.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.012 per 1,000 men per year.....	6
Total requirements.....			6
Cost BASIS:      Net requirements.....			6
\$110.            Total cost of net requirements.....			\$660.00

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 32 cameras, initial supply for Engr. tr. of 500,000 men.  
    Estimated life of equipment, 5 years.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Caps, detonating  
tetryl.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	115.20 per 1,000 men per year.....	57,600
Total requirements.....			57,600
Cost BASIS:      Net requirements.....			57,600
\$0.035.            Total cost of net requirements.....			\$2,016

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 57,600 caps, initial supply for Engr. tr. of 500,000 men. Estimated as  
    1 year's supply.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Caps, tetryl electric blasting.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	115.2 per 1,000 men per year.....	57, 600
Total requirements.....			57, 600
Cost BASIS:      Net requirements.....			57, 600
\$0. 035.      Total cost of net requirements.....			\$2, 016

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 57,600 caps, as initial supply for Engr. tr. of 500,000 men. Estimated 1 year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Celluloid sheets, 0.005" thick.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	33.984 per 1,000 men per year.....	16, 992
Total requirements.....			16, 992
Cost BASIS:      Net requirements.....			16, 992
\$0.15.      Total cost of net requirements.....			\$2, 548. 80

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 16,992 celluloid sheets as initial supply for Engineer troops of 500,000 men.  
Estimated as 1 year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 19—.

QUARTERMASTER CORPS.

M. & E. M. DIVISION.

Appropriation: Formerly procured by Engineers.

Item name: Chest, topographic equipment.

	Strength.	Working basis.*	Requirements.
Initial equipment....	500	1.5 per 1,000 men.....	750

Cost BASIS: Net requirements..... 750

\$17. Total cost of net requirements..... \$12,750

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 750 issued as initial supply for Engineer troops with army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE AND METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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FISCAL YEAR 19—.

QUARTERMASTER CORPS.

M. & E. M. DIVISION.

Appropriation: Formerly procured by Engineers.

Item name: Chest for sketching equipment.

	Strength.	Working basis.*	Requirements.
Initial equipment....	500	2.01 per 1,000 men.....	1,005

Cost BASIS: Net requirements..... 1,005

\$4.25. Total cost of net requirements..... \$4,271.25

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
This material is not in stock and is to be purchased to cover initial issue.  
Maintenance has already been figured on previous sheets.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR  
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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Circuit detector.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.23 per 1,000 men per year.....	115
Total requirements.....			115
Cost Basis:	Net requirements.....		115
\$3.30.	Total cost of net requirements.....		\$379.50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 576 detectors, initial supply for Chief of Engineers. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Clinometer, Abner.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.38 per 1,000 men per year.....	190
Total requirements.....			190
Cost Basis:	Net requirements.....		190
\$11.15.	Total cost of net requirements.....		\$2,118.50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 949 clinometers, initial supply for Engr. tr. of 500,000 men. Estimated life of equipment, five years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 19—.

**QUARTERMASTER CORPS.****M. & E. M. DIVISION.***Appropriation:* Formerly procured by Engineers. *Item name:* Clinometer, Abney.

	Strength.	Working basis.*	Requirements.
Initial equipment....	500	1.5 per 1,000 men.....	750

<b>COST BASIS:</b>	<b>Net requirements.....</b>	<b>750</b>
\$11.25.	<b>Total cost of net requirements.....</b>	<b>\$8,437.50</b>

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the Requirements.

1. **STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

This material is not in stock and is to be purchased to cover initial issue.  
Maintenance has already been figured on previous sheets.

2. **STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 19—.

**QUARTERMASTER CORPS.****M. & E. M. DIVISION.***Appropriation:* Formerly procured by Engineers. *Item name:* Clinometer, reconnaissance.

	Strength.	Working basis.*	Requirements.
Initial equipment....	500	2.01 per 1,000 men.....	1,005

<b>COST BASIS:</b>	<b>Net requirements.....</b>	<b>1,005</b>
\$11.75.	<b>Total cost of net requirements.....</b>	<b>\$11,808.75</b>

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. **STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 1,005 issued as initial supply for Engineer Troops with Army of 500,000 men.

This material is not in stock and is to be purchased to cover initial issue.

2. **STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Clinometer, service with case.

	Strength.	Working basis.*	Requirements
Maintenance.....	500, 000	2.414 per 1,000 men per year.....	1, 207
Total requirements.....			1, 207

Deductions:

Cost Basis:	Net requirements.....	1, 207
\$13.	Total cost of net requirements.....	\$15, 691

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 6,036 clinometers, as initial supply for Engr. tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Clinometers, telescope.

	Strength.	Working basis.*	Requirements
Maintenance.....	500, 000	0.282 per 1,000 men per year.....	141
Total requirements.....			141

Deductions:

Cost Basis:	Net requirements.....	141
\$148.50.	Total cost of net requirements.....	\$20, 938. 50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 705 clinometers, initial supply for Engr. tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 19—.

## QUARTERMASTER CORPS.

M. &amp; E. M. DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Clinometer, telescope with slide rules.

	Strength.	Working basis.*	Requirements.
Initial equipment. . .	500	1. 41.....	705

COST BASIS: Net requirements..... 705  
\$40. Total cost of net requirements..... \$28, 200

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

This material is not in stock and is to be purchased to cover initial issue.  
Maintenance has already been figured on previous sheets.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Procured in the past by office Chief Signal Officer. *Item name*  
Clips, testing, Frankel.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	388. 5 per div. per year.....	9, 324

COST BASIS: Net requirements..... 9,324  
\$0.1235 each. Total cost of net requirements..... \$1,151.51

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

647.45 clips, testing, Frankel, issued per division.  
388.5 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Average contract price.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Cloth, ruby.

	Strength.	Working basis.*	Requirements.
			Yards.
Maintenance . . . . .	500,000	0.352 per 1,000 men per year . . . . .	176

Total requirements . . . . .	yards	176
Cost Basis:      Net requirements . . . . .		176
\$0.45.      Total cost of net requirements . . . . .		\$79.20

- \* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 176 yards cloth as initial supply for Engr. tr. of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Compasses, box.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	0.48 per 1,000 men per year . . . . .	240

Total requirements . . . . .	240
Cost Basis:      Net requirements . . . . .	240
\$3.75.      Total cost of net requirements . . . . .	\$900

- \* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 1,200 compasses, as initial equipment for Engr. tr. of 500,000 men. Estimated life of equipment, five years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

M. AND E. M. DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Compass, prismatic, luminous.

	Strength.	Working basis.*	Requirements.
Maintenance .....	500	2.24 per 1,000 men.....	1,118

Cost Basis:	Net requirements.....	1,118
\$15.00.	Total cost of net requirements .....	\$16,770.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS.  
Authority: Issue tables, Chief of Engineers.  
Basis: 1,118 issued as initial supply for Engineer troops with Army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Compasses, watch.

	Strength.	Working basis.*	Requirements.
Maintenance .....	500,000	17.202 per 1,000 men per year.....	8,601

Total requirements.....	8,601
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Cost Basis:	Net requirements.....	8,601
\$2.31.	Total cost of net requirements .....	\$19,868.31

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 43,004 compasses, as initial equipment for Engr. Tr. of 500,000 men.  
Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Cord, detonating,  
6 mm. 20-yd. spools.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	4.608 per 1,000 men per year.....	2,304 spools.

Total requirements, spools..... 2,304

Cost Basis: Net requirements, spools..... 2,304  
\$2.65 Total cost of net requirements..... \$6,105.60

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 2,304 spools as initial supply for Engr. Tr. of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name:  
Cord, lamp, feet.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat divisions, 4 base divisions.	310 per division per year.	7,440

Cost Basis: Net requirements..... 7,440  
\$15.73 per M'. Total cost of net requirements..... \$117.03

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
516.66 cord, lamp, feet, issued per division.  
310 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price of latest order.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.      Item name:  
Cross arms, lightwood, 8-pin.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat divisions, 4 base divisions.	96 per division per year.	2,304

Cost BASIS:	Net requirements.....	2,304
\$0.50 each.	Total cost of net requirements.....	\$1,152

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
400 cross arms, lightwood, 8-pin, issued per division.  
96 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Declinators.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.572 per 1,000 men per year.....	286

Total requirements.....		286
Cost Basis:	Net requirements.....	286
\$7.92.	Total cost of net requirements.....	\$2,265.12

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 1,430 declinators as initial equipment for Engr. Tr. of 500,000 men.  
Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Declinator with two clamping screws.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2.91 per 1,000 men.....	1,455

Cost Basis:	Net requirements.....	1,455
\$7. 20.	Total cost of net requirements.....	\$10,476

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
This material is not in stock and is to be purchased to cover initial issue.  
Maintenance has already been figured on previous sheets.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly purchased by Engineers.      Item name: Developer M. Q. (100 tubes in box).

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	1.958 per 1,000 men per year.....	979

Total requirements.....		979
Cost Basis:	Net requirements.....	979
\$0. 05.	Total cost of net requirements.....	\$48. 95

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 4896 developer as initial equip. for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

-ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Developer, Pyro, tank.

	Strength.	Working basis.*	Requirements.
			Boxes.
Maintenance.....	500,000	3.262 per 1,000 men per year.....	1,631
Total requirements.....			boxes.. 1,631
Cost BASIS: Net requirements.....			boxes.. 1,631
No. 15. Total cost of net requirements.....			\$244.65

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 1631 developer as initial supply for Engr. Tr. of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by office Chief Signal Officer.      Item name: Disks, cipher.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	12.5 per div. per year.	300

74670.

Cost BASIS: Net requirements.....	300
\$4.50 per M. Total cost of net requirements.....	\$26.55

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
34.41 disks, cipher, issued per div.  
12.5 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
United price of latest order.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING MATERIAL DIVISION.

Appropriation: Formerly procured by Engineer. Item name: Drawing instruments  
(case containing 1 pair compass extension leg, drawing pen proportional dividers.

	Strength.	Working basis.*	Requirements.
Initial equipment....	500	1.5 per 1,000 men.....	750
Cost Basis:	Net requirements.....		750
\$20.50.	Total cost of net requirements.....		\$15,375.00

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
This material is not in stock and is to be purchased to cover initial issue  
Maintenance has already been figured on previous sheets.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Dragon's blood.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.048 per 1,000 men per year.....	24 pounds.
Total requirements.....			24
Cost Basis:	Net requirements.....		24
\$2.20.	Total cost of net requirements.....		\$52.80

\* “Working basis” is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 24 pounds as initial supply for Engr. Tr. of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

**MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer.      *Item name:*  
Drills, rock, compressed air, portable.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat divisions, 4 base divisions.	0.06 per division per year.	1

<b>COST BASIS:</b>	Net requirements.....	1
\$932 each.	Total cost of net requirements.....	\$932. 00

\* "Working basis" is the quantity required per man or unit for stated period, or other factor in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

0.25 drills, rock, compressed air, portable, issued per division.

0.26 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Unit price of latest order.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION.

Appropriation: Item name: Dental supplies.

Total cost of net requirements..... \$446, 677. 64

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 13.

QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION—DENTAL SUPPLIES.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require-ments.	Cost basis.	Total cost
Acidum trichloraceticum, 1 ounce, in glass-stopper bottles.	72 for 25,000.....	1, 440	\$0. 40	\$576. 00
Alloy, copper, 1 ounce, in box (box).....	192 for 25,000.....	3, 840	. 50	1, 920. 00
Alloy, to comply with blacks, physical stand-ards, 1 ounce, in box (boxes).	1,200 for 25,000.....	24, 000	1. 00	24, 000. 00
Alloy balances.....	6 for 25,000.....	120	1. 55	186. 00
Amalgam carriers, double end, No. 5 (one).....	4 for 25,000.....	80	. 85	68. 00
Anchor flasks, bolts for (sets).....	12 for 25,000.....	240	. 10	24. 00
Aprons, rubber (one).....	4 for 25,000.....	80	. 95	76. 00
Articulators, crown and bridge, No. 5 (one) . . .	1 for 25,000.....	20	. 05	1. 00
Articulators, plain line (one).....	do.....	20	. 53	10. 60
Bench, combination (one).....	24 for 25,000.....	5	77. 30	326. 50
Blowers, chip and hot-air syringe, No. 38 (one).	48 for 25,000.....	960	. 28	268. 80
Blowers, chip, extra bulbs for (one).....	240 for 25,000.....	4, 800	. 07½	352. 00
Boilers, instrument small, approximately 12 by 6 by 4 inches.	1 for 25,000.....	20	15. 00	300. 00
Boiler, instrument, electric.....	do.....	20	47. 00	940. 00
Bowls, plaster, A and B of each.....	4 for 25,000.....	80	{ A . 15 B . 23 }	30. 40
Boiler, instrument, small, electric.....	1 for 25,000.....	20	15. 00	300. 00
Books, case, globe.....	0.5 for 25,000.....	10	24. 15	241. 50
Bottles, office, preparation, No. 6.....	10 for 25,000.....	200	. 12	24. 00
Boxes, soap, metal, small.....	12 for 25,000.....	240	. 12	28. 80
Broach, extra fine and fine, 6 in package.....	300 for 25,000.....	6, 000	. 30	1, 800. 00
Brushes, laboratory, plain stiff bristles, ½-inch..	72 for 25,000.....	1, 440	. 35	504. 00
Burners, Bunsem's, dental, No. 12, with spi-ders (one).	None.....		. 21	
Burnishers, L. H., Nos. 29, 32, 34, S, 36 of each..	36 for 25,000.....	2, 880	. 375	1, 080. 00
Burnishers, tantalum, double end, No. 1.....	24 for 25,000.....	480	3. 30	1, 584. 00
Cabinet, dental.....	4 for 25,000.....	80	132. 30	10, 584. 00
Calxine (boxes).....	None.....			
Cases, office, oak, preparation 18, ½ ounce, glass-stopper bottles.	24 for 25,000.....	5	2. 00	10. 00
Cases, office, preparation, extra, ½ ounce, glass-stopper bottles for.	180 for 25,000.....	3, 600	. 12	432. 00
Cement, copper, oxy, phosphate, black (boxes).	120 for 25,000.....	2, 400	. 67	1, 608. 00
Cement, oxy, phosphate, yellow, white, light gray, pearl gray, and dark brown of each.	720 for 25,000.....	14, 400	. 75	10, 800. 00
Chairs, dental.....	1 for 25,000.....	20	172. 25	3, 445. 00
Chairs, dental, portable, metal frame, in chests.	4 for 25,000.....	80	49. 00	3, 920. 00
Chalk, prepared, 2 pounds, in friction or screw top tins.	24 for 25,000.....	480	. 15	72. 00
Chalk, prepared, 3 pounds, in tins.....	0 for 25,000.....			
Chests, empty, for dental engines.....	0. 60 for 25,000.....	12	23. 50	282. 00
Chests, supply, empty (one).....	6 for 25,000.....	120	17. 90	2, 148. 00
Chisels, L. H. Nos. 3, 33, 32, 41, 42, 48 of each...	36 for 25,000.....	720	. 675	486. 00
Clamps, bands, Usona type, Meier Dental Manufacturing Co., M. bicuspid open pattern, envelope, 6-inch.	0 for 25,000.....		2. 00	



## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—DENTAL SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Clamps, rubber dam, ivory, Nos. 19, 20, 21, 22A, 23A, 56, and bi-nap.	4 for 25,000.....	80	\$0.50	\$40.00
Clasp, wire, gold, half round, inches.....	750 for 25,000.....	15,000	.40	6,000.00
Cleansers, root-canal, Donaldson's or S. S. W., No. 5, all fine in package of 6.	900 for 25,000.....	18,000	.125	2,250.00
Compressor, air connections for, sets.....	0.24 for 25,000.....	5	1.05	5.25
Compressor, air, tubing for, feet.....	do.....	5	.14	.70
Compressor, air, unit.....	do.....	5	127.75	638.75
Compressor, air, valves for (one).....	8 for 25,000.....	160	2.10	336.00
Cones, felt, large, blunt and pointed, of each....	282 for 25,000.....	5,760	.17	979.20
Corkscrews, folding.....	4 for 25,000.....	80	.05	4.00
Crowns, assortment, No. 10.....	12 for 25,000.....	240	98.35	22,404.00
Cots, finger, rubber.....	36 for 25,000.....	720	.12	86.40
Cotton, absorbent, rolls, 6 inches long: $\frac{1}{2}$ inch, $\frac{1}{4}$ inch, $\frac{1}{8}$ inch diameter, 100 in box of each...	600 for 25,000.....	36,000	.40 .50 .60	18,000.00
Covers, paper, aseptic, 12 by 12 inches, for bracket table, 100 in box.	240 for 25,000.....	4,800	.57	2,736.00
Cups, drinking.....	24 for 25,000.....	480	.13	62.40
Cups, drinking, paper, 100 in box.....	600 for 25,000.....	12,000	.35	4,200.00
Cups, polishing, soft rubber, small.....	6,000 for 25,000.....	120,000	.0125	1,500.00
Cups, tin, 2 in nest.....	24 for 25,000.....	480	.26	124.80
Cups, die plates, No. 5.....	0 for 25,000.....		4.50	
Cuspidors, fountain.....	4 for 25,000.....	80	30.00	2,400.00
Cuspidors, fountain, extra bowls for (one).....	18 for 25,000.....	360	3.75	1,350.00
Cuspidors, nickel-plated, No. 6.....	0 for 25,000.....		3.50	
Dental Materia Medica and Therapeutics (Prinx) (copies).	do.....		4.40	
Dental Pathology, Therapeutics, and Pharmacology (Burchard-Ingilis).	do.....		4.25	
Dentimeters, Kirks, No. 2 (one).....	do.....		.34	
Dentistry, first aid (Ryan) (copies).....	do.....		.95	
Desks, field, dental, empty (one).....	0.5 for 25,000.....	10	20.75	207.50
Disks, cuttle-fish paper, $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ grit fine, 100 in box of each.	600 for 25,000.....	36,000	.06	2,160.00
Disks, emery paper, $\frac{1}{2}$ , $\frac{1}{4}$ , and $\frac{1}{8}$ grit 0, 100 in box of each.	do.....	36,000	.06	2,160.00
Disks, sandpaper, $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ grit 00, 100 in box of each.	do.....	36,000	.06	2,160.00
Dilators, jaw, ordinary wooden clothes pin (one)	0 for 25,000.....		3.00	
Disks, bristle, 9, 11, and cup shape of each.....	6,000 for 25,000.....	240,000	.025	6,000.00
Disks, carborundum, knife edge, $\frac{1}{2}$ , $\frac{1}{4}$ , and $\frac{1}{8}$ of each.	1,200 for 25,000.....	72,000	.05	3,600.00
Elevators, No. 3, metal handle.....	3 for 25,000.....	160	1.54	246.40
Engine, dental, electric.....	0.2 for 25,000.....	4	29.15	516.60
Engine, dental, cables "A" for.....	6 for 25,000.....	120	1.35	162.00
Engine, dental, cables, "A" sheaths for.....	0.6 for 25,000.....	12	1.25	15.00
Engine, dental, cables, extra cords.....	24 for 25,000.....	480	.27	129.60
Engine, dental, cables, extra cords for.....	36 for 25,000.....	720	.27	194.40
Engine, dental, all cord, cords for extra.....	12 for 25,000.....	240	.27	64.80
Engines, dental, duplex springs for.....	do.....	240	.15	36.00
Engine, dental, all cord with K. 3 attachment No., 7 H. P.	2 for 25,000.....	40	63.00	2,520.00
Engines, dental, duplex springs, sheathes for part 10 X.	4 for 25,000.....	80	.97	77.60
Engines, dental, hand piece "H," contra-angle, burs plug-finishing, 200, 202, 221 for, of each.	500 for 25,000.....	30,000	.30	9,000.00
Engine, dental, hand piece, No. 7 burs, plug finishing, 200, 202, 221, for, of each.	240 for 25,000.....	14,400	.30	4,320.00
Engine, dental, hand piece "H," contraangle, mandrels, Morgan, Maxfield.	do.....	4,800	.15	720.00
Engine, dental, hand piece, No. 7, mandrels, Morgan, Maxfield.	360 for 25,000.....	7,200	.15	1,080.00
Engine, dental, hand piece, "H," contraangle, mandrels, Nos. 302 and 303, for, of each.	600 for 25,000.....	1,200	.05	60.00
Engine, dental, hand piece, No. 7 burs, round, $\frac{1}{2}$ , 1, 2, 4, 6, 8, 9, for, of each.	1,200 for 25,000.....	8,400	.06	504.00
Engine, dental, hand piece, for No. 7, straight, for slip joints No. 2.	6 for 25,000.....	120	11.25	1,350.00
Engine, dental, hand piece, No. 7 burs, dentate 557, 558, 559, 560, 568, for, of each.	1,200 for 25,000.....	120,000	.08	9,600.00
Engine, dental, hand piece, No. 7 burs, fissure, 700, 701, 702, 703, for, of each.	600 for 25,000.....	48,000	.08	3,840.00
Engine, dental hand piece, No. 7 burs, inverted cone, 334, 34, 35, 37, 39, 41, for, of each.	1,200 for 25,000.....	144,000	.06	8,640.00
Engine, dental, hand piece, No. 7 drills, 100, 103, for, of each.	300 for 25,000.....	12,000	.094	1,128.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—DENTAL SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Engine, dental, hand piece, "H," contraangle, burs, round, $\frac{1}{8}$ , 1, 2, 4, 6, 8, 9, for, of each.	1,200 for 25,000 .....	108,000	.08	\$10,800.00
Engine, dental, hand piece, "H," contraangle, burs, inverted cone, 33 $\frac{1}{2}$ , 24, 35, 37, 39, 41, for, of each.	.....do.....	144,000	.05	7,200.00
Engine, dental, hand piece, "H," contraangle, drills, 100, 103, for, of each.	800 for 25,000 .....	12,000	.09 $\frac{1}{2}$	1,120.00
Engine, hand piece, "H," contraangle, burs, fissurs, 700, 701, 702, 703, for, of each.	1,800 for 25,000 .....	80,000	.09	7,200.00
Engine, dental, hand piece, No. 7 mandrels, Nos. 302 and 303, for, of each.	600 for 25,000 .....	24,000	.05	1,200.00
Engine, dental, hand piece, No. 7 mandrels, No. 303, for.	1,200 for 25,000 .....	24,000	.05	1,200.00
Engine, dental, hand piece "H," contraangle, mandrels, No. 303.	.....do.....	24,000	.05	1,200.00
Engine, dental, hand piece, for M, contraangle, for slip joints No. 2.	24 for 25,000 .....	480	10.50	5,040.00
Engine, dental, hand piece, No. 7 points, carborundum, medium grit, mounted, 183, 186, 187, 189, 211, 219, 226, 227, 234, 240, for, of each.	480 for 25,000 .....	96,000	.08 $\frac{1}{2}$	8,000.00
Engine, hand piece "H," contraangle, burs dentate, 557, 558, 559, 560, 568, for, of each.	1,200 for 25,000 .....	24,000	.09	2,160.00
Engines, dental, lubricating oil, for .....	288 for 25,000 .....	5,760	.15	864.00
Engine, dental, slip-joint connections for part F2.	6 for 25,000 .....	120	9.40	1,152.00
Engines, dental, slip-joint connections for part C2.	.....do.....	120	3.45	414.00
Examination blanks, No. 2, 50 in pad .....	360 for 25,000 .....	7,200	.09	648.00
Excavators, Black's cutting instrument, Nos. 1, 17, 19, 21, 23, 34, 37, 39, 49, 50, 57, 58, 63, 64, 67, 68, 73, 74, 81, 83, of each.	24 for 25,000 .....	9,600	.40	3,840.00
Explorers, L. H., 5, 6, 11, 12, 18, of each .....	.....do.....	2,400	.15	360.00
Eugenol, 1 ounce, in bottles .....	216 for 25,000 .....	4,320	.425	1,836.00
Fiber, devitalizing, arsenical, in jars .....	24 for 25,000 .....	480	.25	120.00
Files, gold, flat, 6-inch .....	12 for 25,000 .....	240	.35	84.00
Files, gold, round, 6-inch .....	.....do.....	960	.05	60.00
Floss, silk, waxed, 24 yards in spool .....	1,440 for 25,000 .....	28,000	.07	2,016.00
Forceps, crown, sitting .....	1 for 25,000 .....	20	3.45	69.00
Forceps, mechanical, clasp bending, No. 8, McKellop's.	.....do.....	20	3.50	70.00
Forceps, rubber dam, clap, Brewer's type .....	6 for 25,000 .....	120	3.25	390.00
Forceps, rubber dam, punch, perfected .....	3.6 for 25,000 .....	72	2.55	183.60
Forceps, tooth-extracting, 10, 15, 18 R, 18 L, 65, 180, 151, 222 of each.	1 for 25,000 .....	160	3.75	600.00
Gauges, plate and wire, B. & S. ....	4 for 25,000 .....	80	2.03	162.40
Gold plate, 30 gauge, 22 kw. t., dwt. ....	750 for 25,000 .....	15,000	.08	14,700.00
Gold solder, 18 k. dwt. ....	500 for 25,000 .....	10,000	.76	7,600.00
Gutta-percha stopping, high-heat sticks, $\frac{1}{4}$ -ounce, in box.	288 for 25,000 .....	5,760	.30	1,728.00
Gutta-percha stopping, temporary pink sticks, 1-ounce, in box.	1,200 for 25,000 .....	24,000	.25	6,000.00
Hammers, swaging, 1 $\frac{1}{2}$ -pound .....	1 for 25,000 .....	60	1.08	21.60
Heaters, electric, cut-off for .....	8 for 25,000 .....	160	3.85	616.00
Heaters, electric .....	4 for 25,000 .....	80	17.50	1,400.00
Holders, for cotton, Methot's type .....	.....do.....	80	.53	42.40
Holders for nerve breach, No. 2 .....	72 for 25,000 .....	1,440	.36	518.40
Holders, rubber dam, anatomies .....	4 for 25,000 .....	80	.48	38.40
Holders for mercury, ebony, No. 2 .....	6 for 25,000 .....	120	.36	43.20
Hones, oil, Arkansas, stone, in wooden boxes .....	4 for 25,000 .....	80	.28	22.40
Investment compound, C. & B. (Tina) .....	48 for 25,000 .....	960	.50	480.00
Investment compound, 3 pounds in tin .....	72 for 25,000 .....	1,440	.25	360.00
Knives, plaster, Nos. 5 and 10, of each .....	20 for 25,000 .....	600	.25	150.00
Lamps, alcohol, large, Purdy's (one) .....	12 for 25,000 .....	240	.78	187.20
Lancets, gun metal handle, octagon, No. 5, ....	8.4 for 25,000 .....	168	.60	100.80
Lancets, abscess, metal handle, octagon, No. 5.	24 for 25,000 .....	480	.85	408.00
Ladles, with handles (melting), Nos. 5 and 8, of each.	3 for 25,000 .....	120	.50	60.00
Ladles, melting, No. 8 .....	.....do.....	60	.17	10.20
Lamps, alcohol, No. 26, with flame shields .....	12 for 25,000 .....	240	.65	156.00
Lathes, the Unique, complete (670 Lee S. Smith, catalogue, 5th, each) (one).	5 for 25,000 .....	5	6.50	32.50
Lead, ingots .....	48 for 25,000 .....	960	.06	57.60
Mallets, metal canes, No. 16 .....	0.42 for 25,000 .....	8	.55	4.40
Matrix retainers, Ivory's, extra bands for, bicuspid and molar.	1,200 for 25,000 .....	24,000	.015	360.00
Matrix strips, copper, soft, $\frac{1}{8}$ inch wide, 36 gauge, 5 in box, 6 inches long.	24 for 25,000 .....	480	.11	52.80
Matrix retainers, Ivory's, No. 1 .....	12 for 25,000 .....	240	1.25	300.00
Mats, rubber .....	3 for 25,000 .....	60	5.75	345.00
Medicine droppers (dozen) .....	48 for 25,000 .....	960	1.09	1,046.40

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—DENTAL SUPPLIES—continued.

Name of item.	Working basis.	Require- ments.	Cost basis.	Total cost.
Mechanical dams, automaton (one).....	4.2 for 25,000.....	84	\$1.44	\$120.96
Mercury, redistilled, 4 ounces, in bottles.....	420 for 25,000.....	8,400	.57	4,788.00
Metal, Melottes.....	36 for 25,000.....	720	.40	288.00
Mirrors, hand, bevel, 5 inches.....	8.4 for 25,000.....	168	1.50	252.00
Mirrors, mouth, extra glasses for, size No. 4, magnifying and plain, of each.....	720 for 25,000.....	14,400	.30	4,320.00
Mirrors, mouth, aluminum handles, No. 4.....	120 for 25,000.....	2,400	.40	960.00
Molar cutters, extractors, separator, handles for.....	18 for 25,000.....	360	1.47	529.20
Molar extractors, improved, lower (one).....	do.....	360	5.43	1,954.90
Molar extractors, improved, upper (one).....	do.....	360	5.43	1,954.80
Molding compound, pounds.....	8.4 for 25,000.....	168	.18	30.24
Molding, and tins.....	24 for 25,000.....	480	.60	288.00
Modeling composition, perfection (Detroit), $\frac{1}{2}$ pound in box.....	300 for 25,000.....	6,000	.34	2,040.00
Mortars and pestles, glass, No. 2 (one).....	12 for 25,000.....	240	.30	72.00
Napkins, dental, aseptic, 500 in box.....	420 for 25,000.....	8,400	2.30	19,320.00
Novocain, 50 mgm. hypodermic, tablets, or equivalent, tubes.....	1,800 for 25,000.....	36,000	.38	12,960.00
Paper, articulating, thin, in books.....	60 for 25,000.....	1,200	.05	60.00
Paper, bibulous, Japanese, 100 sheets in package.....	do.....	1,200	.275	330.00
Paper, points, absorbent (box).....	720 for 25,000.....	14,400	.38	5,472.00
Phenol, camphorated, 4 ounces, in bottles.....	48 for 25,000.....	960	.425	408.00
Plaster of Paris, French impression, 4 pounds, in screw-top tins.....	600 for 25,000.....	12,000	.38	4,560.00
Plate, German silver, B. & S. gauge, No. 30, size 6 by 6 inches.....	60 for 25,000.....	1,200	.05	60.00
Pliers, contouring, No. 114, Johnson (one).....	1.2 for 25,000.....	24	1.125	27.00
Pliers, contouring, No. 115, Crescent (one).....	do.....	24	1.00	24.00
Pliers, dressing, No. 2 (one).....	12 for 25,000.....	240	.50	120.00
Pliers, dressing, No. 17 (one).....	do.....	240	.50	120.00
Pliers, office, smooth back, No. 122 (one).....	4.2 for 25,000.....	84	1.00	84.00
Pliers, round nose, No. 107.....	1.2 for 25,000.....	24	1.00	24.00
Pluggers, amalgam, Woodsons, 1, 2, and 3 of each.....	24 for 25,000.....	1,440	.40	576.00
Pluggers, plaster, L. H., 4, 28, 37, 39, 40, and 40A of each.....	do.....	2,880	.334	960.00
Pluggers, root-canal, Donaldsons, 2, 4, and 6 of each.....	4.2 for 25,000.....	252	.22	55.44
Points, root-canal, gutta-percha, 8, 10, and 12 of each.....	360 for 25,000.....	21,600	.15	3,240.00
Points, soft rubber, corrugated, G. & L., of each.....	6,000 for 25,000.....	240,000	.0125	3,000.00
Port, polishers, contraangle.....	8.4 for 25,000.....	168	1.10	184.80
Port, polishers, contraangle, wood paints for, assorted in box.....	96 for 25,000.....	1,920	.38	729.60
Post, puller, Little Giant (one).....	8.4 for 25,000.....	168	2.00	336.00
Pots, medicine, glass, Dappens, green and white of each.....	120 for 25,000.....	2,400	.08	192.00
Probe, silver (one).....	6 for 25,000.....	120	.85	102.00
Pumice stone, powdered, 1 pound, in screw- top tin.....	240 for 25,000.....	4,800	.02	336.00
Root facers, safe side, for H. L. No. 7, 7, 8, and 8 of each.....	420 for 25,000.....	8,400	.45	3,780.00
Root reamers, Peass's, for H. P. No. 7, 2, 3 of each.....	do.....	8,400	.50	4,200.00
Rubber dam, plain medium, 18' x 6'', sealed tins.....	240 for 25,000.....	4,800	.75	3,600.00
Rubber ligatures, assorted sizes, in box (S.S.W.) (box).....	20 for 25,000.....	400	.19	76.00
Rubber, pink, $\frac{1}{2}$ pound, in box.....	96 for 25,000.....	1,920	2.25	4,320.00
Rubber, red (pounds).....	132 for 25,000.....	2,640	1.80	4,752.00
Rubber, red, vulcanite (pounds).....	20 for 25,000.....	400	1.80	720.00
Sandarac, Gpm., 1 ounce, in carton.....	300 for 25,000.....	6,000	.10	600.00
Sandpaper, 00 to 1 of each.....	2,400 for 25,000.....	96,000	.011	1,056.00
Saws, dental, complete, garden, white.....	3.6 for 25,000.....	72	.90	64.80
Saws, dental, garden, white, extra blades for.....	360 for 25,000.....	7,200	.27	1,944.00
Saws, frame, mechanical.....	1.2 for 25,000.....	24	.30	7.20
Saws, frame, mechanical, extra blades for.....	576 for 25,000.....	11,520	.025	288.00
Scales, L. H., 3, 6, 30, 33, 34, 40, 41, 54, 59, and 68 of each.....	6 for 25,000.....	120	.50	60.00
Scales, pyorrhea.....	do.....	120	4.00	480.00
Scissors, gum, curved or flat, No. 22.....	12 for 25,000.....	240	1.85	444.00
Screw, Porter, Morrison improved No. 2.....	6 for 25,000.....	120	.60	72.00
Separators, adjustable, Ivorys or equivalent.....	26 for 25,000.....	72	1.00	72.00
Shades, bars.....	24 for 25,000.....	480	.10	48.00
Shears, No. 8, 10, 11 of each.....	1.2 for 25,000.....	72	.80	57.60
Shears, No. 32.....	12 for 25,000.....	240	1.25	300.00
Silicate cement, 10 shade, full portion in box.....	24 for 25,000.....	480	17.50	8,400.00
Silicate, cement, shade, guides for.....	do.....	480	1.00	480.00
Slabs, mixing, glass, No. 6 (one).....	48 for 25,000.....	960	.35	336.00
Sodium and potassium, in sealed tubes.....	216 for 25,000.....	4,320	.25	1,080.00
Folder, silver (ounce).....	60 for 25,000.....	1,200	.75	900.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—DENTAL SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Soldering appliances, Melcotte's, improved with blowpipe, pads, and clamps, complete.	2 for 25,000.....	40	\$1.40	\$56.00
Soldering and heating outfits, gasoline generator No. 45, complete, less blowpipe stand (one).	1 for 25,000.....	20	19.18	383.60
Soldering iron, 2-pound.....	do.....	20	.96	19.20
Spatulas, agate or bone.....	24 for 25,000.....	480	1.00	480.00
Spatulas, No. 5, 22, and 24 of each.....	do.....	960	.33	316.80
Spatulas, plaster, 4-inch.....	12 for 25,000.....	240	.21	50.40
Spatulas, rubber, 4-inch.....	do.....	240	.16	38.40
Stands, portable, complete, less tables, for field use (Clark's type).	3.6 for 25,000.....	72		28.00
Strips, celluloid, thin, 100 in box.....	180 for 25,000.....	3,600	.25	900.00
Strips, polishing, assorted grits, in boxes.....	360 for 25,000.....	7,200	.18	1,296.00
Stoves, alcohol, Dauglar type (one).....	4.8 for 25,000.....	96	3.50	336.00
Syringe, hot air, electric (one).....	8.4 for 25,000.....	168	12.25	2,058.00
Syringes, hypodermic, dental, all metal, No. 172-A (one).	24 for 25,000.....	480	1.00	480.00
Syringes, hypodermic, extra bulbs for, long and short, of each.	do.....	960	.075	72.00
Syringes, hypodermic, all metal, extra needles for straight and curved, of each.	1,200 for 25,000.....	48,000	.0625	3,000.00
Syringes, hypodermic, extra needles for, conduction anasthesia (Fisher's type), 42 mm. and 23 mm. length (one).	300 for 25,000.....	12,000	.05	600.00
Syringes, self-filling, extra pipes for, curved (one).	12 for 25,000.....	240	.11	26.40
Syringes, water, 21-A.....	60 for 25,000.....	1,200	.30	360.00
Syringes, water, 21-A, extra bulbs for (one)....	360 for 25,000.....	7,200	.30	2,160.00
Tables, aseptic type (one).....	.5 for 25,000.....	10	4.25	42.50
Tap and die set (Gruesford), screw plate and two tops.	240 for 25,000.....	5	3.00	15.00
Teeth, vulcanite, assortment, No. 1 assortment.	12 for 25,000.....	240	128.64	30,873.60
Trays, lower impression, 1, 3, 15, 17, and 22, of each.	.8 for 25,000.....	80	.30	24.00
Trays, upper impression, 1, 3, 5, 12, 14, and 18 of each.	do.....	96	.30	28.80
Tools, Universal.....	4 for 25,000.....	80	1.00	80.00
Trays, wooden, for molding sand.....	1 for 25,000.....	20	1.25	25.00
Tubing, rubber, 1/4-inch, heavy, wall, white, feet.	60 for 25,000.....	1,200	.80	96.00
Tweezers, B, C, D, E, of each.....	4.20 for 25,000.....	84	.10	8.40
Vises, bench, jewelers, 2-inch (one).....	1.2 for 25,000.....	24	1.30	31.20
Vulcanite files, round and half round, of each...	36 for 25,000.....	720	.25	180.00
Vulcanizers, 3 flasks, gas or kerosene (one)....	1 for 25,000.....	20	26.45	529.00
Vulcanite, scrapers and finishers 3, 7, 8, 26, and 27, of each.	4.2 for 25,000.....	420	.14	58.80
Wax, base plate, pink, 1/2 pound, in boxes.....	72 for 25,000.....	1,440	.30	432.00
Wheels, carborundum, lathe, square edge, 1 and 2 inches diameter, 1/8 inch width, grits C. and E., of each.	12 for 25,000.....	480	{ 1", .125 2", .20 }	78.00
Wire, binding, 32 gauge, spools.....	do.....	240	.21	50.40
Wax, covers, for roaches (one).....	1 for 25,000.....	20	2.20	44.00
Wax, inlay (boxes).....	72 for 25,000.....	1,440	.25	360.00
Wax, yellow, impression, 1/2-pound boxes.....	10 for 25,000.....	200	.30	60.00
Wheels, brush, 3, 5, 6, 16, 24, and 26, of each....	72 for 25,000.....	8,640	{ 3, .06 5, .08 6, .11 16, .14 26, .21 }	1,166.40
Wheels, carborundum, square edge, Nos. 301, 302, 304, 305, of each.	432 for 25,000.....	8,640	.05	432.00
Wheels, felt, square edge No. 3, round edge No. 4, knife edge No. 2, of each.	72 for 25,000.....	1,440	.16	230.40
Whetstones, carborundum, 5-inch (one).....	4 for 25,000.....	80	.50	40.00
Wire, aluminum bronze, 13-inch lengths in box opening at end, 1/2 pound, assorted, as follows: 24 gauge, 40 per cent; 26 gauge, 40 per cent; 28 gauge, 20 per cent.	20 for 25,000.....	400	.55	220.00
Wire, galvanized iron, No. 8 gauge, 2-foot lengths.	240 for 25,000.....	4,800	.11	528.00
Wire, galvanized iron, No. 10 gauge, 2-foot lengths.	do.....	4,800	.10	480.00
Wire, German silver, gauges 12, 16, 18, 4-foot lengths, of each.	49 for 25,000.....	960	.20	192.00
Wire, ligature, angles, No. 187, boxes.....	24 for 25,000.....	480	.60	288.00
Wood, orange, sticks, large, 25 in bundle.....	240 for 25,000.....	4,800	.10	480.00
Zinc, 1/2-pound ingots.....	10 for 25,000.....	200	.08	16.00
Total.....				446,677.64

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Exploders, magneto.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.23 per 1,000 men per year.....	115 (No.).

Total requirements..... 115

COST BASIS:      Net requirements..... 115  
\$36.80.      Total cost of net requirements..... \$4,232

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the REQUIREMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 576 No. as initial equip. for Engr. Tr. of 500,000 men.    Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING MATERIALS DIVISION.****ANNUAL ESTIMATE, FISCAL YEAR 1920.***Item name:* Maintenance of Engineer depots.*Appropriation:* Regular supplies.**Total estimated cost: \$56,375.****Explanation:**

See detailed sheet attached.

**MANUFACTURE, REPAIR, AND LOCAL PURCHASE OF ENGINEER EQUIPMENT AT DEPOTS.****Engineer depot, Fort Leavenworth:**

Repair and maintenance of ponton equipage on hand and local purchase of instruments for troops, military surveys, etc.....	\$9,000
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**Engineer depot, Fort Douglas:**

Repair and maintenance of ponton equipage on hand, construction and equipage of new ponton equipage, local purchase of tools, instruments, and supplies for troops, military surveys, etc.....	8,500
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**Engineer depot, Fort Sam Houston:**

Repair and maintenance of ponton equipage on hand, local purchase of tools, supplies, etc., for Engineer troops.....	20,500
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**Department Engineer, Western Department:**

Repair of instruments, local purchase of drafting and reconnaissance instruments and supplies.....	3,800
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**Engineer depot, Corozal, C. Z.:**

Repair and maintenance of ponton equipage on hand, construction and equipment of new ponton equipage, local purchase of tools, supplies, etc., for troops.....	1,100
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**Engineer depot, Honolulu, Hawaii:**

Local purchase of miscellaneous equipment and supplies for troops.....	5,000
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47,900
**Engineer depot, Manila, P. I.:**

Repair and maintenance of ponton equipage on hand, construction and equipment of new ponton equipage, local purchase of tools, supplies, etc., for troops.....	3,350
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51,250

Contingencies (10 per cent).....	5,125
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56,375

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

ORDNANCE DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Explosive, cylinders.

	Strength.	Working basis.*	Requirements.
			<i>Pounds.</i>
Maintenance . . . . .	500,000	5.76 per 1,000 men per year . . . . .	2,880

Total requirements . . . . . 2,880  
 Cost BASIS: Net requirements . . . . . pounds.. 2,880  
 \$0.80. Total cost of net requirements . . . . . \$2,304

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Authority: Issue tables, Chief of Engineers.  
 Basis: 2,880 pounds explosive; as initial supply for Engineer Troops of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

ORDNANCE DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Explosive, rectangular blocks.

	Strength.	Working basis.*	Requirements.
			<i>Pounds.</i>
Maintenance . . . . .	500,000	161.28 per 1,000 men per year . . . . .	80,640

Total requirements . . . . . 80,640  
 Cost BASIS: Net requirements . . . . . pounds.. 80,640  
 \$0.80. Total cost of net requirements . . . . . \$64,512

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Authority: Issue tables, Chief of Engineers.  
 Basis: 80,640 pounds explosive, as initial supply for Engineer Troops of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Recent purchases.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Field glasses with case.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.244 per 1,000 men per year.....	122

Total requirements.....	122
Cost BASIS: Net requirements.....	122
\$45. Total cost of net requirements.....	\$5,490

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 608 as initial equipment for Engineer Train of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Films, autographic, kodak 3½ x 5½" rolls of 6 exposures.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	9.984 per 1,000 men per yea.....	4,992

Total requirements.....	4,992
Cost BASIS: Net requirements.....	4,992
\$0.35. Total cost of net requirements.....	\$1,747.20

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 4,992 films as initial supply for Engineer Train of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.



ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Flashlights, electric, complete.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	1.844 per 1,000 men per year.....	922
Total requirements.....			922
Cost BASIS:      Net requirements.....			922
\$1.25.      Total cost of net requirements.....			\$1, 152. 50

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue tables, Chief of Engineers.  
    Basis: 4,608 flashlights, as initial equipment for Engr. tr. of 500,000 men.  
    Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.      Item name: Flashlights, electric, complete.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 Com- bat Div. 4 Base Div.	234 per Div. per year.....	5, 616
Total requirements.....			5, 616
Cost BASIS:      Net requirements.....			5, 616
\$0.51 each.      Total cost of net requirements.....			\$2, 864. 16

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    389.79 flashlights, electric, complete, issued per Div.  
    234 maintenance per Div. per year. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Unit price on latest order.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Flash cartridges.

	Strength.	Working basis.*	Requirements.
			Dozen.
Maintenance.....	500,000	0.832 per 1,000 men per year.....	416
Total requirements.....			dozen.. 416
COST BASIS: Net requirements.....			dozen.. 416
\$0.45. Total cost of net requirements.....			\$187.20

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 416 dozen flash cartridges, as initial equipment for Engineer troops of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Flash Powder, Victor, normal grade, 3-ounce boxes.

	Strength.	Working basis.*	Requirements.
			Boxes.
Maintenance.....	500,000	0.832 per 1,000 men per year.....	416
Total requirements.....			boxes.. 416
COST BASIS: Net requirements.....			boxes.. 416
\$1.20. Total cost of net requirements.....			\$499.20

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 416 Flash Powder, as initial equipment for Engineer troops of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name:  
Forges, blacksmith, port., comp.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	1.68 per div. per year.	40

66643.

Cost Basis: Net requirements..... 40  
\$42 each. Total cost of net requirements..... \$1,680

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Seven forges, blacksmith, port., comp., issued per div. 1.68 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price on latest order.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Fuse, Bickford.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	230.4 per 1,000 men per year.....	Feet. 115,200

Total requirements..... 115,200

Cost Basis: Net requirements..... 115,200  
\$0.007. Total cost of net requirements..... \$806.40

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 115,200 feet fuse as initial supply for Engr. tr. of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Fuse, instantaneous  
type Clover leaf.

	Strength.	Working basis.*	Requirements.
			<i>Feet.</i>
Maintenance.....	500,000	115.2 per 1,000 men per year.....	57,600

Total requirements..... 57,600

Cost Basis:      Net requirements..... 57,600  
\$0.05.      Total cost of net requirements..... \$2,880

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 57,600 feet of fuse as initial supply for Engr. tr. of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION.

Appropriation: Item name: Field equipment.

Deductions:

Total cost of net requirements..... \$148,011.15

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

See detailed sheets attached or Appendix No. 11.

## QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION—FIELD EQUIPMENT.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require-ments.	Cost basis.	Total cost.
Bars, mosquito, frames for:				
Automatic type.....	12 for 25,000.....	240	\$0.25	\$60.00
Spreaders for automatic type (one).....	do.....	240	.265	63.60
Basins, rubber (one).....	120 for 25,000.....	2,400	.55	1,320.00
Bedpans, box of (par. 906).....	1 for 25,000.....	20	21.00	420.00
Bedpans, white enamel or agate ware (one).....	48 for 25,000.....	960	1.75	1,680.00
Belts, web:				
Hospital Corps.....	240 for 25,000.....	4,800	6.50	31,200.00
Medical officers.....	48 for 25,000.....	960	3.52	3,379.00
Blankets, rubber.....	240 for 25,000.....	4,800	2.00	9,600.00
Calcium carbide:				
10 pounds, in tin.....	12 for 25,000.....	240	.57	136.80
100 pounds, in drum.....	do.....	240	4.25	1,020.00
Cases, bedding:				
Large, empty.....	do.....	240	2.50	600.00
Small, empty.....	do.....	240	2.00	480.00
Chests:				
Medical and surgical (par. 932).....	6 for 25,000.....	120	4.00	480.00
Medical and surgical sup. (par. 933) (one).....	3 for 25,000.....	60	4.00	240.00
Mess (par. 934).....	do.....	60	8.40	504.00
Sterilizers (par. 935).....	do.....	60	4.75	285.00
Tableware (par. 936).....	do.....	60	4.25	255.00
Corks No. 7, for alcohol tins (one).....	240 for 25,000.....	4,800	.0025	12.00
Corkscrews, folding (one).....	24 for 25,000.....	480	.042	20.16
Desks:				
Field No. 1.....	0.5 for 25,000.....	10	8.05	80.50
Field No. 2.....	0.24 for 25,000.....	5	4.50	22.50
Flashlights, hand:				
Electric (one).....	12 for 25,000.....	240	1.10	264.00
Electric, extra lamps for.....	2,400 for 25,000.....	48,000	1.50	72,000.00
Do.....	480 for 25,000.....	9,600	.08	768.00
Flashlights, pocket, with extra batteries.....	2.4 for 25,000.....	48	1.50	72.00
Flasks, empty (par. 907).....	180 for 25,000.....	3,600	.045	162.00
Food, ambulance box of (par. 947).....	12 for 25,000.....	48	1.50	72.00
Iodine swabs, 6 in box.....	120 for 25,000.....	2,400	.15	360.00
Lanterns, folding.....	2.4 for 25,000.....	48	1.70	81.60
Lanterns, without wicks or globe (one).....	60 for 25,000.....	1,200	.52	624.00
Litters:				
Canvas for.....	300 for 25,000.....	6,000	1.35	8,100.00
Tacks for, 75-package.....	240 for 25,000.....	4,800	.02	96.00
With slings (one).....	60 for 25,000.....	1,200	5.00	6,000.00
Pyrene fire extinguishers, fillers for (one).....	24 for 25,000.....	480	.83½	400.00
Stoppers, rubber, for 4-ounce vials (one).....	360 for 25,000.....	7,200	.006	43.20
Surgical dressings:				
Ambulance box of (par. 954) (one).....	24 for 25,000.....	480	2.00	960.00
Box of (par. 955) (one).....	do.....	480	2.00	960.00
Tables:				
Mess, folding (one).....	6 for 25,000.....	120	2.91	349.20
Operating, folding, field (one).....	2.4 for 25,000.....	48	14.25	684.00
Trusses for supporting litters as operating table.....	1.2 for 25,000.....	24	.683	16.39
Venereal prophylaxis units (par. 958) (one).....	12 for 25,000.....	240	16.00	3,840.00
Total.....				148,011.15

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers.      *Item name:* Fuse lighters.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	148.96 per 1,000 men per year.....	74,480

Total requirements..... 74,480

COST BASIS:      Net requirements..... 74,480  
\$0.02.      Total cost of net requirements..... \$1,489.60

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 74,480 fuse lighters, as initial supply for Engr. tr. of 500,000 men. Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Furniture.

Deductions:

Total cost of net requirements..... \$82,770.80

STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

See detailed sheets attached or Appendix No. 2.

QUARTERMASTER CORPS.

GENERAL SUPPLIES DIVISION—FURNITURE.

(Estimate computed on strength of 500,000 men.)

Name of item.	Working basis.	Require-ments.	Cost basis.	Total cost.
Chairs:				
Arm.....	60 for 25,000.....	720	<sup>1</sup> \$3.00	\$2,592.00
Common.....	120 for 25,000.....	2,400	1.65	3,960.00
Folding.....	do.....	2,400	<sup>1</sup> .66 <sup>2</sup>	1,600.00
Do.....	20.4 per 1,000 men per year.	10,200	<sup>1</sup> .66 <sup>2</sup>	6,800.00
Office, revolving.....	2 for 25,000.....	40	8.75	350.00
Cuspidors.....	24 for 25,000.....	960	<sup>1</sup> 1.25	1,200.00
Desks:				
A.....	0.128 per 1,000 men per year.	.69	40.80	2,780.00
B.....	do.....	69	38.00	2,622.00
Field—				
Complete stand.....	0.02 per 1,000 men per year.	<sup>2</sup> .10	.78.00	780.00
Large, with full allowance (each).....	0.48 per 1,000 men per year.	240	14.92	3,580.80
Small, with full allowance of equip-ment (each).....	1.2 per 1,000 men per year.	600	7.71	4,626.00
Chairs, invalid, rolling, collapsible.....	120 for 25,000.....	2,400	20.00	48,000.00
Chairs, rocking.....	60 for 25,000.....	1,200	3.25	3,900.00
Total.....				82,770.80

<sup>1</sup> Each.

<sup>2</sup> Sets.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Formaline acid.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance .....	500, 000	0.352 per 1,000 men per year.....	176
Total requirements.....			176
Cost Basis: Net requirements.....			176
\$0.55. Total cost of net requirements.....			\$96. 80

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers  
Basis: 176 pounds formaline, as initial supply for Engr. tr. of 500,000 men.  
Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Glass, magnifying.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.39 per 1,000 men per year.....	195
Total requirements.....			195
Cost Basis: Net requirements.....			195
\$0.60. Total cost of net requirements.....			\$117

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 976 glass magnifying as initial equip. for Engr. tr. of 500,000 men.  
Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.



ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.  
M. & E. M. DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Glass, magnifying,  
hand.

	Strength.	Working basis.*	Requirements.
Initial equipment...	500	0.2 per 1,000 men.....	100

COST BASIS:	Net requirements.....	100
\$0.54.	Total cost of net requirements.....	\$54

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 100 issued as initial supply for Engineer troops with Army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.  
MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer.      Item name:  
Glasses, field, type EE.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	97 per div. per year...	2,328

COST BASIS:	Net requirements.....	2,328
\$39.	Total cost of net requirements.....	\$90,792

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
405 glasses, field, type EE, issued per div.  
97 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Contract prices of present U. S. production.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

M. & E. M. DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Glass, magnifying.  
large, with tripod.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.04 per 1,000 men.....	19

Cost Basis:      Net requirements..... 19  
\$1.      Total cost of net requirements..... \$19

\* "Working basis" is the quantity required per man or per unit for stated period:  
or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 19 issued as initial supply for Engineer troops with army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by office of Chief Signal Officer.      Item name:  
Glasses, field, Galilean, 4½ power.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	1 per div. per year....	24

Cost Basis:      Net requirements..... 24  
\$20.      Total cost of net requirements..... \$480

\* "Working basis" is the quantity required per man or per unit for stated period:  
or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
4 glasses, field, Galilean, 4½ power, issued per div.  
1 maintenance per div. per year.      Wastage for U. S. training approved by Chief  
Signal Officer.  
Estimate made by.....E. M. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

M. & E. M. DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Glass, magnifying, pocket.

	Strength.	Working basis.*	Requirements.
Initial equipment....	500	1.5 per 1,000 men.....	750

Cost BASIS:	Net requirements.....	750
\$0.54.	Total cost of net requirements.....	\$405

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 750 issued as initial supply for Engineer troops with army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer.      Item name: Glasses, field, 8 power, without mil. scale.

	Strength.	Working basis.*	Requirements.
Maintenance .....	20 combat div., 4 base div.	28 per div. per year...	672

Cost BASIS:	Net requirements.....	672
\$35.	Total cost of net requirements.....	\$23, 520

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
115.75 glasses, field, 8 power, without mil. scale, issued per div.  
28 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.

Estimate made by E. M. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer.      Item name:  
Glasses, field, 12 power, prismatic, binocular.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	0.39 per div. per year..	19

Cost BASIS:	Net requirements.....	19
\$50.	Total cost of net requirements.....	\$950

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1.62 glasses, field, 16 power, prismatic, binocular, issued per div.  
0.39 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.

Estimate made by E. M. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer.      Item name:  
Glasses, field, 16 power, prismatic binocular.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	0.39 per div. per year.	9

Cost BASIS:	Net requirements.....	9
\$75.	Total cost of net requirements.....	\$675

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1.62 glasses, field, 16 power, prismatic binocular, issued per div.  
0.39 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.

Estimate made by E. M. B.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer. Item name:  
Glasses, field, prism. binocular, 8 power.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	.048 per div. per year.	576

COST BASIS: Net requirements..... 576  
\$40. Total cost of net requirements..... \$23, 040

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
178.08 glasses, field, prism binocular, 8 power, issued per div.  
0.48 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer. Item name:  
Gloves, lineman's, gross.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	20.5 per div. per year.	492

COST BASIS: Net requirements..... 492  
\$79.20 per gross. Total cost of net requirements..... \$38, 966. 40

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
33.81 gloves, lineman's, gross, issued per div.  
20.5 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Cost based on recent contracts.

Estimate made by V. H.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer. Item name:  
Gloves, rubber, with buckskin overglove.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	1 per div. per year . . .	24

COST BASIS:	Net requirements . . . . .	24
\$3.75 per pr.	Total cost of net requirements . . . . .	\$90.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1.87 gloves, rubber, with buckskin overglove, issued per div.  
1 maintenance per div. per year. Wastage for U. S. training approved by Chief Signal Officer.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Cost based on recent contracts.

Estimate made by V. H.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Gum arabic.

	Strength.	Working basis.*	Requirements.
			Pounds.
Initial equipment . . .	500,000	1.2 per 1,000 per year . . . . .	600

Total requirements . . . . .	pounds . .	600
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COST BASIS:	Net requirements . . . . .	600
\$0.40.	Total cost of net requirements . . . . .	\$240.00

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS.  
Authority: Issue Tables, Chief of Engineers.  
Basis: 600 lbs. gum arabic as initial supply for Engr. tr. of 500,000 men.  
Estimated 1 year's supply.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS.  
Recent purchases.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Heavy hardware.

Total cost of net requirements..... \$982, 527. 45

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS.  
See detailed sheets attached or Appendix No. 3.

QUARTERMASTER CORPS.

GENERAL SUPPLIES DIVISION—HEAVY HARDWARE, STOVES, AND RANGES.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require-ments.	Cost basis.	Total cost.
Blocks:				
6" double.....	0.116 per 1,000 men per year...	58	\$3.25	\$188.50
6" single.....	do.....	58	1.70	98.60
8" single.....	0.268 per 1,000 men per year...	134	2.45	328.30
8" double.....	do.....	134	4.00	536.00
6" snatch.....	0.116 per 100 men per year.....	58	3.95	229.10
8" snatch.....	0.268 per 1,000 men per year...	134	5.00	670.00
8" triple.....	0.268 per 100 men per year.....	134	5.40	723.60
Single sheave, 4".....	2 per division per year.....	48	1.53	25.44
2-sheave, 3 1/2".....	3 per division per year.....	72	1.50	36.00
2-sheave, 6".....	1.35 per division per year.....	32	1.30	41.60
3-sheave, 6".....	0.50 per division per year.....	12	1.75	21.00
5-sheave, 8".....	0.17 per division per year.....	4	9.15	36.60
Kettles, camp.....	84 per 1,000 men per year.....	42,000	1.25	52,500.00
Nails:				
Horseshoeing, Nos. 4, 5, 6, 7, and 8, pounds.....	120 per 1,000 men per year.....	600,000	1.1752	105,120.00
Finishing, 6, 8, 10, and 20 penny, pounds.....	1,152 per 1,000 men per year...	576,000	.03762	21,600.12
16-penny, pounds.....	38.20 per division per year.....	917	.0365	33.47
20-penny, pounds.....	248.30 per division per year.....	5,959	.036	214.52
Horseshoeing, Nos. 4, 5, 6, 7, and 8, pounds.....	960 per 1,000 men per year.....	480,000	.15	72,000.00
Nozzles, hose.....	8 for 25,000.....	160	1.50	80.00
Pots, stock:				
24 quarts, with spigot.....	48 for 25,000.....	960	6.50	6,240.00
36 quarts, with spigot.....	do.....	960	7.35	7,056.00
Ranges, field:				
No. 1, each.....	7.2 per 1,000 men per year.....	3,600	20.26	72,936.00
No. 2, each.....	3.6 per 1,000 men per year.....	1,800	11.47	20,646.00
Rollers, leather, 14".....	0.02 per 1,000 men per year....	10	11.00	110.00
Sales, field, each.....	0.396 per 1,000 men per year...	198	21.50	4,257.00
Scales, folding platform, each.....	1.128 per 1,000 men per year...	564	36.00	20,304.00
Scales and weights, grocers'.....	0.24 for 25,000.....	5	9.40	47.00
Shoes:				
Horse (all sizes), pounds.....	8,400 per 1,000 men per year...	4,200,000	5.75	241,500.00
Mule.....	1,728 per 1,000 men per year...	864	.15	129.60
Mule (all sizes), pounds.....	6,000 per 1,000 men per year...	3,000,000	5.75	172,500.00
Stoves, heating.....	0.3645 per capita.....	182,250		182,250.00
Total.....				982,527.45

1 Each.                    2 Average.                    3 Per pound.                    4 Per 100 pounds.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Light hardware.

Deductions:  
Total cost of net requirements..... \$1, 018, 850.09

See detailed sheets attached or Appendix No. 4.

QUARTERMASTER CORPS.

GENERAL SUPPLIES.

(Estimate computed on strength of 500,000 men.)

LIGHT HARDWARE.

Name of item.	Working basis.	Require-ments.	Cost basis.	Total cost.
Batteries, extra, for flash lights.....	62.4 for 1,000.....	31,200	\$0.14	\$4,368.00
Blades, safety-razor (dozen).....	36 for 1,000.....	18,000	.03½	525.00
Boxes, match.....	0.46 for 1,000.....	230	.12	27.60
Boxes, tin.....	0.038 for 1,000.....	19	.25	4.75
Brooms, corn.....	566.688 for 1,000.....	283,344	.72	204,007.68
Do.....	2,500 for 25,000.....	50,000	.70	35,000.00
Brooms, hair, long-handle, for floors.....	200 for 25,000.....	4,000	1.28	5,120.00
Brooms, stable.....	4.32 for 1,000.....	2,160	.77	1,663.20
Brushes, bristle, 4".....	0.048 for 1,000.....	24	.83	19.92
Brushes, fiber, hand.....	10,000 for 25,000.....	200,000	.11	22,000.00
Brushes, hair, counter.....	300 for 25,000.....	6,000	.47	8,220.00
Brushes, marking.....	11,472 for 1,000.....	5,736	.0243	139.38
Brushes, paint.....	100 for 25,000.....	2,000	1.34	2,680.00
Brushes, 1½", rd., stencil.....	1.46 for division.....	35	.2866	10.03
Brushes, scrubbing.....	1,500 for 25,000.....	30,000	.16	4,800.00
Brushes, shaving.....	100 for 25,000.....	2,000	.15	300.00
Brushes, spotting.....	0.048 for 1,000.....	24	.10	2.40
Brushes, stove-blackening.....	60 for 25,000.....	1,200	.61	732.00
Brushes, whitewash.....	25.332 for 1,000.....	12,666	1.67	21,152.22
Brushes, paint, 4".....	1.46 per division.....	35	1.98	69.30
Buckets, G. I.....	96 for 25,000.....	1,920	.50	960.00
Buckets, G. I., fire.....	116.4 for 1,000.....	58,200	.475	27,645.00
Bulbs, extra, for flash-lights.....	15.6 for 1,000.....	7,800	.075	585.00
Cans, gasoline, 1-gallon.....	1.7 per division.....	41	.34½	14.15
Can, night, urinal.....	17.4 for 1,000.....	8,700	2.50	21,750.00
Can, steel, 3-gallon.....	0.01 for 1,000.....	5	3.50	17.50
Can, steel, 5-gallon.....	0.418 for 1,000.....	209	4.70	982.30
Chain, log, ¾" by 9', Atkins Binder.....	0.16 per division.....	4	9.50	.45
Chains, surveyor's, 200 ft.....	0.06 per division per year.....	2	12.00	24.00
Chalk, carpenter's.....	0.384 per 1,000.....	192	.08	15.36
Chalk, lines, 40 ft.....	2.876 per 1,000.....	1,488	.10	148.80
Dippers, ½-gal., equipment of rolling kitchen.....	10.944 per 1,000.....	5,472	1.00	5,472.00
Flashlights.....	15.6 per 1,000.....	7,800	.62	4,836.00
Funnels, enamel ware, 25 c. c.....	0.24 for 25,000.....	48	.25	12.00
Funnels, enamel ware, 250 c. c.....	do.....	48	.30	14.40
Funnels, enamel ware, 1,000 c. c.....	2.4 for 25,000.....	48	.44	21.12
Glass, ruby, extra for ruby lamp..	0.352 for 1,000.....	176	.55	96.80
Globes, lantern, blue.....	0.3 for 1,000.....	150	.35	52.50
Globes, lantern, clear.....	56.952 for 1,000.....	28,476	.1744	4,966.22
Globes, lantern, extra.....	780 for 25,000.....	1,560	.17	265.20
Globes, lantern, green.....	1.272 for 1,000.....	636	.35	222.60
Do.....	24 for 25,000.....	480	.35	168.00
Globes, lantern, red.....	1.092 for 1,000.....	546	.35	191.10
Handcuffs..... pairs..	0.864 for 1,000.....	432	3.00	1,296.00
Handles, mop.....	180 for 25,000.....	3,600	.08125	292.50
Heads, mop.....	1,800 for 25,000.....	36,000	.26	9,360.00
Hooks, brush.....	3 per division per year.....	72	1.00	72.00
Hose, rubber, 50-ft. lengths.....	10 for 25,000.....	200	.0825	825.00



## QUARTERMASTER CORPS—Continued.

## GENERAL SUPPLIES—continued.

## LIGHT HARDWARE—Continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Knives, brush cutting.....	9.22 per division per year.....	221	\$1.68	\$371.28
Knives, butcher, parts for R. K. and for kitchen utensils.....	10.944 for 1,000.....	5,472	.30	1,641.60
Ladders, extension, 4 meter.....	4.05 per division.....	97	2.80	271.60
Ladders, extension, 7 meter.....	1.48 per division.....	36	4.90	176.40
Ladders, 14 ft., wood.....	8 per division.....	192	1.92	368.64
Lamps, ruby.....	0.07 for 1,000.....	35	.55	19.25
Lamp black..... pounds..	19.908 for 1,000.....	9,954	.1475	1,468.21
Lanterns, best hand.....	0.336 for 1,000.....	168	4.30	722.40
Lanterns, candles, folding.....	18 for 25,000.....	360	1.07	385.20
Lanterns, complete.....	34 for 25,000.....	720	.83	597.60
Lanterns, frames, combination.....	27.36 for 1,000.....	13,680	1.07	14,637.60
Lanterns, Keystone.....	0.998 for 1,000.....	499	2.50	1,247.50
Mantels, gas.....	6.704 for 1,000.....	3,352	.10	335.20
Oilers, 1-pt., brass.....	0.008 for 1,000.....	4	.15	.60
Pans, dust.....	120 for 25,000.....	2,400	.31	744.00
Papers, stove blacking.....	1,200 for 25,000.....	24,000	.025	600.00
Pencils, carpenters.....	0.974 for 1,000.....	487	.30	146.10
Plumb bobs, 9½-oz.....	0.24 for 1,000.....	120	.95	114.00
Plumb line.....	2.86 for 1,000.....	1,430	.95	1,358.50
Pots, marking.....	6 for 1,000.....	3,000	.35	1,050.00
Rakes, fine, for portable forge.....	0.08 for 1,000.....	40	.15	6.00
Razors, safety.....	108 for 1,000.....	54,000	{ 1.50 1.14 }	71,280.00
Rollers, glazed.....	0.01 for 1,000.....	5	9.90	49.50
Screws, assorted..... gross..	5.288 for 1,000.....	2,644	.15	396.60
Shovels, fire, for portable forge.....	0.08 for 1,000.....	40	.40	16.00
Snaps, swivel, 5'.....	2.52 for division.....	60	.15	9.00
Solder, half and half..... pounds..	0.456 for 1,000.....	229	.55	125.95
Spikes, Marlin.....	1.152 for 1,000.....	576	.40	230.40
Stoves, oil, single burner.....	0.01 for 1,000.....	5	3.00	15.00
Tacks, iron.....	0.458 for 1,000.....	229	.16	36.60
Trays, agate, nested, sets of 4.....	0.07 for 1,000.....	35	3.23	113.05
Trays, enameled, 20 x 24'.....	0.01 for 1,000.....	5	7.70	38.50
Trays, zinc, 24 x 30'.....	0.012 for 1,000.....	6	4.00	24.00
Trays, zinc, 30 x 42'.....	do.....	6	5.00	30.00
Tubs, wash.....	36 for 25,000.....	720	1.25	900.00
Whirlers.....	0.01 for 1,000.....	5	10.00	50.00
Wicks, lantern, assorted.....	40.92 for 1,000.....	20,460	{ .0047 .0051 }	100.25
Wicks, ruby lantern..... dozen..	0.192 for 1,000.....	96	.06	5.76
Wicks, canteen..... do.....	2.6 for 1,000.....	1,300	.06	78.00
				485,507.80
Adapter for mimeoscope.....	0.016 per 1,000 men per year.....	8	4.95	38.60
Adzes, handles, 32'.....	0.462 per 1,000 men per year.....	231	1.60	369.60
Anvils, blacksmith's, 100 lb.....	0.08 per 1,000 men per year.....	40	17.50	700.00
Augers, earth.....	0.346 per 1,000 men per year.....	173	7.55	1,306.15
Augers, ship, handled, 1½'.....	0.596 per 1,000 men per year.....	298	1.00	298.00
Augers, ship, handled, 1½'.....	0.24 per 1,000 men per year.....	120	1.05	126.00
Augers, ship, handled, 1½'.....	0.586 per 1,000 men per year.....	293	2.40	703.20
Awl, blades, harness, stitching, assorted.....	0.058 per 1,000 men per year.....	29	.20	5.80
Awls, lockstitch.....	36 per 1,000 men per year.....	18,000	.294	5,250.00
Axes, hand, lineman's.....	25 per division per year.....	600	.84	504.00
Axes, handled, 32'.....	0.092 per 1,000 men per year.....	46	1.40	64.40
Axes, handled, 36'.....	6.586 per 1,000 men per year.....	3,293	1.40	4,610.20
Axes, heads only.....	75 per 1,000 men per year.....	37,500	1.00	37,500.00
Axes, short-handled.....	60 for 25,000.....	1,200	1.20	1,440.00
Ax helves.....	4.47 per division per year.....	107	.334	35.67
Ax helves, short.....	120 for 25,000.....	2,400	.25	600.00
Bags, tool, canvas.....	0.5 per division per year.....	11	3.00	33.00
Bags, tool, service, complete.....	7.17 per division per year.....	172	28.00	4,816.00
Bars, digging and tamping.....	0.99 per division per year.....	24	1.234	29.58
Bars, digging, standard.....	15.75 per division per year.....	378	1.75	661.50
Bars, pinch, large (wired together).....	1.584 per 1,000 men per year.....	792	1.05	831.60
Bars, pinch, small.....	0.116 per 1,000 men per year.....	58	.40	23.20
Bars, tamping.....	1.79 per division per year.....	43	2.00	86.00
Bars, wood, tamping.....	0.23 per 1,000 men per year.....	115	.10	11.50
Bars, wrecking, carpenter's.....	0.5 per division per year.....	11	1.25	13.75
Bars, wrecking, claw and gooseneck.....	1.042 per 1,000 men per year.....	521	.30	156.30
Bars, wrecking, claw and pinch point.....	0.95 per 1,000 men per year.....	475	.30	142.50
Belts, lineman's tool, with safety strap.....	8.77 per division per year.....	210	5.00	1,050.00
Bevels, T.....	0.24 per 1,000 men per year.....	120	.25	30.00
Bits, ½ x 8'.....	2.25 per division per year.....	54	2.64	11.88

## QUARTERMASTER CORPS—Continued.

## GENERAL SUPPLIES—continued.

## LIGHT HARDWARE—Continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
	2.25 per division per year.....	54	92.04	\$11.88
	5.30 per division per year.....	122	4.00	44.00
	1 per division per year.....	24	7.25	14.75
	0.002.....	46	1.00	73.90
i.	0.058 per 1,000 men per year.....	29	2.00	84.10
	0.47 per 1,000 men per year.....	235	3.20	732.00
	0.332 per 1,000 men per year.....	103	1.40	232.40
	0.092 per 1,000 men per year.....	46	.21	9.66
	0.30 per 1,000 men per year.....	196	.19	19.50
	0.332 per 1,000 men per year.....	103	.12	19.92
	4.8 per division per year.....	115	.0006	4.54
n.	1.2 per 1,000 men per year.....	600	.00	300.00
	7.2 per 1,000 men per year.....	3,600	.33	1,188.00
m.	do.....	3,600	.33	1,188.00
	0.14 per 1,000 men per year.....	70	3.26	228.00
	0.058 per 1,000 men per year.....	29	3.26	95.12
	1.35 per division per year.....	32	1.6036	30.00
t.	0.232 per 1,000 men per year.....	116	3.25	477.00
	0.24 per 1,000 men per year.....	120	10.50	1,260.00
	1.128 per 1,000 men per year.....	564	43.06	24,281.76
	0.064 per 1,000 men per year.....	32	7.50	240.00
	6.48 per division per year.....	155	13.00	2,016.00
	1.26 per division per year.....	20	50.00	1,770.00
	0.33 per division per year.....	8	213.00	1,704.00
	0.288 per division per year.....	7	140.00	980.00
	0.4 per division per year.....	10	84.00	840.00
	0.46 per division per year.....	11	90.00	990.00
	0.01 per 1,000 men per year.....	5	53.00	265.00
	0.24 per 1,000 men per year.....	120	.15	18.00
	0.256 per 1,000 men per year.....	178	.30	53.40
	0.562 per 1,000 men per year.....	281	.30	84.30
	0.06 per 1,000 men per year.....	30	.45	13.50
3.	0.206 per 1,000 men per year.....	149	2.10	311.40
sets.				
Chisels, hot, handled.....	0.048 per 1,000 men per year.....	24	.45	10.80
Chisels, socket firmer, sets of 2, sets.....	0.002 per 1,000 men per year.....	46	.95	43.70
Chisels, wood, 2".....	4.5 per division per year.....	108	.92	99.36
Clamps, C, 6".....	0.48 per 1,000 men per year.....	240	3.00	864.00
Clamps, Haven, with 2" ring.....	0.9 per division per year.....	22	2.06	45.32
Clamps, splicing, 7".....	15 per division per year.....	360	1.40	504.00
Clamps, splicing, 11".....	4 per division per year.....	96	1.60	153.60
Clamps, splicing, combination.....	6.5 per division per year.....	156	1.10	240.00
Climber, linemen's.....	0.268 per 1,000 men per year.....	134	3.00	402.40
Climbers, linemen's, with straps and pads.....	26 per division per year.....	624	2.84	1,834.56
Clippers, bolt.....	0.73 per 1,000 men per year.....	365	1.90	693.50
Coppers, soldering.....	0.092 per 1,000 men per year.....	46	1.10	50.60
Countersinks, iron.....	0.048 per 1,000 men per year.....	24	1.06	25.44
Crimpers, cable ring.....	0.22 per division per year.....	5	5.70	28.50
Crimpers, Dupont type, crimper.....	0.46 per 1,000 men per year.....	230	.88	195.40
Cutters, bolt, 1/2" max.....	0.50 per division per year.....	12	5.40	64.80
Cutters, clinch (buffer).....	0.08 per 1,000 men per year.....	40	.28	11.20
Cutters, glass.....	0.092 per 1,000 men per year.....	46	.06	2.76
Cutters, pipe, No. 2.....	0.028 per 1,000 men per year.....	14	2.00	28.00
Dies and taps, sets, complete.....	0.03 per division per year.....	1	10.50	10.50
Digger, posthole, earth auger, wired together.....	0.23 per 1,000 men per year.....	115	4.20	483.00
Diggers, posthole, Ewan, 6".....	2.5 per division per year.....	60	1.00	60.00
Dividers, wing.....	0.384 per 1,000 men per year.....	192	.35	67.20
Drills, cordeau, handled.....	0.092 per 1,000 men per year.....	346	.90	311.40
Drills, 1" diamond, with 1 1/2" bit.....	0.23 per 1,000 men per year.....	115	1.80	207.00
Drills, rock, 3'.....	0.9 per division per year.....	22	1.45	31.90
Drills, rock, 4'.....	do.....	22	1.95	42.90
Drills, rock, 6'.....	do.....	22	2.50	55.00
Drills, 1" diamond, 22", with 1 1/2" bit.....	0.346 per 1,000 men per year.....	173	1.05	181.65
Drills, star, 1/2" x 12".....	0.5 per division per year.....	12	.14	1.68
Drills, star, 1/2" x 18".....	do.....	12	.204	2.448
Drills, star, 1/2" x 24".....	do.....	12	.334	4.008
Drills, twist, sets of 3..... sets.....	0.24 per 1,000 men per year.....	120	.92	110.40
Drills, twist, sets of 13..... sets.....	0.048 per 1,000 men per year.....	24	6.05	145.20
Equipments, horseshoes, emergency.....	0.38 per 1,000 men per year.....	180	1.30	234.00
Files, auger bit, 6".....	0.048 per 1,000 men per year.....	24	.08	1.92
Files, crosscut saw.....	5.328 per 1,000 men per year.....	2,664	.12	319.68

## QUARTERMASTER CORPS—Continued.

## GENERAL SUPPLIES—continued.

## LIGHT HARDWARE—Continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Files, flat, bastard, 10"	0.336 per 1,000 men per year.....	168	\$0.20	\$33.60
Files, flat, bastard, 12"	1.488 per 1,000 men per year.....	744	.26	193.44
Files, flat, bastard, 10"	2.25 per division per year.....	54	.1725	9.31
Files, flat, bastard, 14"	0.672 per 1,000 men per year.....	336	.35	117.60
Files, flat, smooth, 10"	0.144 per 1,000 men per year.....	72	.25	18.00
Files, flat, smooth, 12"	1.2 per 1,000 men per year.....	600	.26	156.00
Files, flat, smooth, 14"	0.208 per 1,000 men per year.....	104	.45	46.80
Files, half-round, bastard, 8"	0.144 per 1,000 men per year.....	72	.20	14.40
Files, half-round, bastard, 12"	do.....	72	.32	23.04
Files, mill, bastard, 8"	0.24 per 1,000 men per year.....	120	.12	14.40
Files, mill, bastard, 12"	do.....	120	.25	30.00
Files, mill, second-cut, 8"	0.144 per 1,000 men per year.....	72	.12	8.64
Files, mill, second-cut, 12"	0.666 per 1,000 men per year.....	333	.25	83.25
Files, round, bastard, 8"	0.24 per 1,000 men per year.....	120	.12	14.40
Files, round, bastard, 10"	1.2 per 1,000 men per year.....	600	.15	90.00
Files, round, bastard, 12"	0.24 per 1,000 men per year.....	120	.20	24.00
Files, round bastard, 12"	1.2 per 1,000 men per year.....	600	.30	180.00
Files, round smooth, 12"	0.144 per 1,000 men per year.....	72	.32	23.04
Files, saw, taper.....	6.388 per 1,000 men per year.....	3,194	.10	319.40
Flatters, handled.....	0.048 per 1,000 men per year.....	24	.75	18.00
Forges, portable.....	1.7652 per 1,000 men per year.....	883	24.00	21,192.60
Do.....	0.08 per 1,000 men per year.....	40	27.00	1,080.00
Frames, hacksaw.....	0.2 per division per year.....	1	.34	.34
Fullers, T. & B., $\frac{1}{2}$ ".....sets	0.048 per 1,000 men per year.....	24	1.25	30.00
Grinders, carborundum.....	0.456 per 1,000 men per year.....	228	5.75	1,311.00
Do.....	0.22 per division per year.....	5	3.675	18.37
Grindstones, 18"	0.05 per division per year.....	1	5.35	5.35
Hammers, ball peen, 3-lb.....	0.062 per 1,000 men per year.....	31	.90	27.90
Hammers, carpenter's, claw.....	9.5 per division per year.....	228	.60	136.80
Hammers, claw, handled.....	1.83 per 1,000 men per year.....	915	.65	594.75
Hammers, cross peen, 3-lb.....	0.048 per 1,000 men per year.....	24	1.32	31.68
Hammers, farriers'.....	0.138 per 1,000 men per year.....	69	.55	37.95
Hammers, machinists'.....	0.336 per 1,000 men per year.....	168	1.00	168.00
Hammers, riveting.....	0.048 per 1,000 men per year.....	24	.45	10.80
Hammers, set.....	do.....	24	.40	9.60
Hammers, sledge.....	3.5 per division per year.....	84	1.20	100.80
Hammers, sledge, 8-lb., handled.....	1.036 per 1,000 men per year.....	518	1.25	647.50
Hammers, sledge, 10-lb., handled.....	0.06 per 1,000 men per year.....	30	1.45	43.50
Hammers, straight peen, 2-lb.....	0.116 per 1,000 men per year.....	58	.85	49.30
Hammers, turning.....	0.08 per 1,000 men per year.....	40	1.35	54.00
Handles, adz, 32"	1.152 per 1,000 men per year.....	576	.15	86.40
Handles, sugar ship, 1 $\frac{1}{2}$ ".....	do.....	576	.12	69.12
Handles, ax, 36"	3.456 per 1,000 men per year.....	1,728	.28	483.84
Handles, file.....	1.5 per division per year.....	31	.04	1.24
Handles, fuller top.....	0.24 per 1,000 men per year.....	120	.10	12.00
Handles, hammer, claw, 14"	1.2 per 1,000 men per year.....	600	.08	48.00
Handles, hammer, farriers'.....	0.4 per 1,000 men per year.....	200	.08	16.00
Handles, chisel, framing, 6".....dozen	1.2 per 1,000 men per year.....	600	.05	30.00
Handles, hot chisel.....	0.304 per 1,000 men per year.....	152	.10	15.20
Handles, file.....	2.238 per 1,000 men per year.....	1,119	.25	279.75
Handles, flatter.....	0.24 per 1,000 men per year.....	120	.10	12.00
Handles, hammer, machinists'.....	0.048 per 1,000 men per year.....	24	.10	2.40
Handles, sledge, hammer, 8-lb.....	1.152 per 1,000 men per year.....	576	.26	149.76
Handles, hammer, sledge, 10-lb.....	0.304 per 1,000 men per year.....	152	.26	39.52
Handles, hatchet.....	3.456 per 1,000 men per year.....	1,728	.10	172.80
Handles, pick, R. R., 36"	1.152 per 1,000 men per year.....	576	.33	190.08
Handles, pickmattock, large.....	6.912 per 1,000 men per year.....	3,456	.20	691.20
Handles, saw, crosscut, 1-man.....	1.2 per 1,000 men per year.....	600	.10	60.00
Handles, saw, crosscut, 2-man, pairs.....	1.152 per 1,000 men per year.....	576	.60	345.60
Hardies.....	0.08 per 1,000 men per year.....	40	.30	12.00
Hatchets, camp.....	3 per 1,000 men per year.....	1,500	.645	967.50
Hatchets, handled.....	1.22 per 1,000 men per year.....	610	.85	518.50
Hatchets, half-handled.....	0.96 per 1,000 men per year.....	480	.70	336.00
Headers, rivets, sets of 3.....sets	0.048 per 1,000 men per year.....	24	1.46	35.04
Helves, ax.....	363.96 per 1,000 men per year.....	181,980	.25	45,495.00
Helves, pickax.....	433.2 per 1,000 men per year.....	216,600	.294	63,175.00
Holder, tool or handle.....	0.092 per 1,000 men per year.....	46	1.45	66.70
Hooks, cant.....	0.9 per division per year.....	22	1.26	27.72
Irons, branding, hoof, A to Z, and 0 to 9, $\frac{1}{2}$ ".....	1.2 per 1,000 men per year.....	600	.335	201.00
Irons, branding, IC & WS.....	0.924 per 1,000 men per year.....	462	1.30	600.60
Irons, clinching.....	0.08 per 1,000 men per year.....	40	.45	18.00
Irons, fire.....	10.944 per 1,000 men per year.....	5,472	1.34	7,332.48
Jacks, screw.....	0.038 per 1,000 men per year.....	19	14.50	275.50
Jacks, wagon.....	1.188 per 1,000 men per year.....	594	4.75	2,821.50
Kits, B. S. pack trains.....	0.0648 per 1,000 men per year.....	33	6.68	220.44

## QUARTERMASTER CORPS—Continued.

## GENERAL SUPPLIES—continued.

## LIGHT HARDWARE—Continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Kits, cargadors.....	0.0548 per 1,000 men per year.....	33	\$10.00	\$330.00
Kits, repair motor company.....	0.11 per division per year.....	3	125.00	375.00
Kits, soldering.....	2.55 per division per year.....	61	16.00	975.00
Knives, clasp.....	0.23 per 1,000 men per year.....	115	.55	63.25
Knives, draw.....	0.24 per 1,000 men per year.....	120	1.90	228.00
Knives, draw.....	1.35 per division per year.....	32	.75	24.00
Knives, electricians'.....	250.5 per division per year.....	6,012	.65	3,907.80
Knives, gabion.....	2.188 per 1,000 men per year.....	1,094	.60	656.40
Knives, putty.....	0.092 per 1,000 men per year.....	46	.20	9.20
Knives, scraper, 4".....	0.01 per 1,000 men per year.....	5	2.95	14.75
Knives, shoring.....	0.204 per 1,000 men per year.....	102	.40	40.80
Knives, toe.....	0.03 per 1,000 men per year.....	40	.35	14.00
Ladles.....	120 for 25,000.....	2,400	.275	660.00
Levels, carpenters', 24".....	0.24 per 1,000 men per year.....	120	1.50	180.00
Mallets, carpenters'.....	0.092 per 1,000 men per year.....	46	.40	18.40
Mallets, wood.....	1.51 per division per year.....	36	.70	25.20
Mauls.....	0.5532 per 1,000 men per year.....	276	1.80	476.40
Menders, harness.....	2.76 per 1,000 men per year.....	1,380	1.35	1,863.00
Needles, etching..... sets.....	0.144 per 1,000 men per year.....	72	4.95	356.40
Needles, harness..... packages.....	7 per 1,000 men per year.....	3,600	.18	648.00
Needles, harness (papers).....	5.46 per 1,000 men per year.....	288	.11	31.68
Needles, sacking.....	12 per 1,000 men per year.....	6,000	.045	270.00
Nippers, shoeing.....	0.138 per 1,000 men per year.....	69	1.06	73.14
Oilstones.....	0.478 per 1,000 men per year.....	239	.20	47.80
Peavies, handled.....	0.46 per 1,000 men per year.....	230	1.65	379.50
Pickaxes, heads only.....	109.2 per 1,000 men per year.....	54,600	.734	40,131.00
Pick mattocks, E. D. Mining, handled.....	0.576 per 1,000 men per year.....	288	.70	201.60
Pick mattocks, large, handled.....	23.42 per 1,000 men per year.....	710	1.20	14,052.00
Picks, R. R.....	0.092 per 1,000 men per year.....	11,346	1.05	363.30
Pincers, shoeing.....	0.134 per 1,000 men per year.....	67	.20	53.60
Planes, jack.....	0.332 per 1,000 men per year.....	166	1.65	273.90
Pliers, combination, 6".....	0.092 per 1,000 men per year.....	46	.22	10.12
Pliers, combination, 10".....	0.24 per 1,000 men per year.....	120	.35	42.00
Pliers, diagonal cutting, 5".....	0.67 per division per year.....	16	.693	11.80
Pliers, long-nose, 6".....	2.69 per division per year.....	65	.472	306.80
Pliers, side cutting, 5".....	3.52 per division per year.....	84	.45	37.80
Pliers, side cutting, 6".....	166.5 per division per year.....	3,996	.4875	1,948.05
Pliers, side cutting, 8".....	40.34 per division per year.....	968	.704	685.66
Pliers, side cutting, 11".....	2.572 per 1,000 men per year.....	1,286	1.45	1,864.70
Pritchels.....	0.076 per 1,000 men per year.....	38	.16	6.08
Punches, center, 3½".....	0.24 per 1,000 men per year.....	120	.06	7.20
Punches, fore and creaser handles.....	0.07 per 1,000 men per year.....	35	1.15	40.25
Punches, revolving.....	0.058 per 1,000 men per year.....	29	.35	10.15
Punches, round handled, ½".....	0.06 per 1,000 men per year.....	30	.43	12.90
Punches, round handled, ¾".....	0.048 per 1,000 men per year.....	24	.65	15.60
Punches, solid point, ¼ x 9".....	0.24 per 1,000 men per year.....	120	.10	12.00
Punches, square handled, ½".....	0.048 per 1,000 men per year.....	24	.53	12.72
Punches, square handled, ¾".....	do.....	24	.75	18.00
Rasps, shoeing, 16".....	1.36 per 1,000 men per year.....	680	.35	338.00
Rules, folding, 6'.....	2.45 per division per year.....	56	3.90	18.20
Rules, steel, 12".....	0.48 per 1,000 men per year.....	40	.90	216.00
Rules, 2-fold, calliper, 6".....	0.24 per 1,000 men per year.....	1,200	.25	30.00
Rules, 2', 4-fold.....	0.632 per 1,000 men per year.....	316	.45	142.20
Saws, compass, set of 3 blades, handle.....	0.24 per 1,000 men per year.....	120	1.40	168.00
Saws, compass, set of 3 blades, handle.....	0.116 per 1,000 men per year.....	58	1.40	81.20
Saws, cross-cut, folding.....	do.....	58	10.65	617.70
Saws, cross-cut, hand, 26".....	0.62 per 1,000 men per year.....	310	1.75	542.50
Saws, cross-cut, handle, 20".....	0.23 per 1,000 men per year.....	115	1.70	195.50
Saws, cross-cut, 1 man, 36".....	0.45 per division per year.....	11	1.55	17.05
Saws, cross-cut, 2 men.....	9.96 per 1,000 per year.....	4,880	4.20	20,496.00
Saws, cross-cut, 2 men.....	0.22 per division per year.....	5	4.20	21.00
Saws, cross-cut, 1-man.....	0.48 per 1,000 men per year.....	240	2.05	492.00
Saws, cross-cut, 2-man.....	2.084 per 1,000 men per year.....	1,042	3.09	3,219.78
Saws, hack, solid frames, 8".....	0.508 per 1,000 men per year.....	254	.40	101.60
Saws, hand, cross-cut.....	6.79 per division per year.....	163	1.54	251.02
Saws, hand, rip.....	0.11 per division per year.....	3	1.55	4.65
Saws, rip, hand.....	0.332 per 1,000 men per year.....	166	1.75	290.50
Saws, sets, with clamps.....	0.03 per division per year.....	1	.55	.55
Saws, sets.....	0.456 per 1,000 men per year.....	228	.45	102.60
Saws, tools.....	0.356 per 1,000 men per year.....	178	.35	62.30
Screw drivers, cabinet size.....	0.55 per division per year.....	13	.53	6.89
Screw drivers, 3".....	7.68 per division per year.....	184	.09	16.72
Screw drivers, 3" blade.....	0.25 per 1,000 men per year.....	125	.12	27.50
Screw drivers, 5" blade.....	0.24 per 1,000 men per year.....	120	.15	18.00

## QUARTERMASTER CORPS—Continued.

## GENERAL SUPPLIES—continued.

## LIGHT HARDWARE—Continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Screw drivers, 6"	10.02 per division per year.....	240	\$0.265	\$63.60
Screw drivers, 8"	4.38 per division.....	105	.38	39.90
Screw drivers, 8" blade.....	0.332 per 1,000 men per year.....	166	.20	33.20
Screw drivers, 12" by $\frac{1}{2}$ ".....	0.45 per division per year.....	11	.52	5.72
Shovels, E. D., intr trenching.....	45.456 per 1,000 men per year.....	22,728	.95	21,591.60
Shovels, E. D., mining.....	0.922 per 1,000 men per year.....	461	.95	437.95
Shovels, long-handled.....	2.88 per 1,000 men per year.....	1,440	1.20	1,728.00
Shovels, short-handled.....	200.04 per 1,000 men per year.....	100,020	1.00	100,020.00
Shovels, short-handled, round point.....	5.88 per division per year.....	141	1.00	141.00
Shovels, short-handled, square point.....	do.....	141	1.00	141.00
Sickles.....	36 for 25,000.....	720	.18	129.60
Snips, tinners.....	0.062 per 1,000 men per year.....	46	1.76	80.96
Spades, regular.....	54.72 per 1,000 men per year.....	27,360	.98 $\frac{1}{2}$	26,904.00
Spoons, miners' long.....	0.23 per 1,000 men per year.....	115	.60	68.00
Spoons, shovel and digging, long-handled.....	12.76 per division per year.....	306	1.68	514.08
Squares, steel, carpenters'.....	0.058 per 1,000 men per year.....	29	.85	24.65
Squares, steel, take down, 24" by 12".....	0.24 per 1,000 men per year.....	120	1.95	234.00
Squares, steel, 24".....	0.22 per division per year.....	5	1.045	5.23
Squares, T.....	0.136 per 1,000 men per year.....	68	.55	37.40
Squares, T.....	0.168 per 1,000 men per year.....	84	.85	71.40
Squares, try.....	0.332 per 1,000 men per year.....	166	.35	58.10
Stamps, steel (numbers and letters), sets.....	0.134 per 1,000 men per year.....	67	3.45	231.15
Stocks, taps, and dies, No. 2...sets.....	0.028 per 1,000 men per year.....	14	28.00	392.00
Stones, snake.....	0.02 per 1,000 men per year.....	10	1.15	11.50
Swedges, T. B., from $\frac{1}{4}$ " to 1".....	0.058 per 1,000 men per year.....	29	4.20	121.80
Swivels, 5".....	0.67 per division per year.....	16	.20	3.20
Tape, line, 50'.....	0.9 per division per year.....	22	2.205	48.51
Tape, measuring, steel, 100'.....	0.456 per 1,000 men per year.....	228	4.25	969.00
Tapes, metallic, 26'.....	0.24 per 1,000 men per year.....	120	1.85	222.00
Tapes, metallic, 50'.....	0.726 per 1,000 men per year.....	363	2.40	871.20
Tape, steel, 50'.....	0.198 per 1,000 men per year.....	99	3.00	297.00
Tape, steel, 100'.....	0.12 per 1,000 men per year.....	60	4.70	282.00
Tapes, steel, 200'.....	0.22 per division per year.....	5	11.39	56.95
Tire, measures.....	0.06 per 1,000 men per year.....	30	1.45	43.50
Tones, shoeing, $\frac{1}{2}$ ".....	0.08 per 1,000 men per year.....	40	.40	16.00
Tongs, smith's gad, $\frac{1}{2}$ ".....	do.....	40	.58	23.20
Tongs, smith's gad, 1".....	do.....	40	.63	25.20
Tongs, smith's straight, 18".....	0.108 per 1,000 men per year.....	54	.47	25.38
Tongs, smith's straight, 22".....	0.02 per 1,000 men per year.....	10	.47	4.70
Tools, blacksmith and harness chests Eq. for Tem. Squadron.....	2.5584 per 1,000 men per year.....	1,279	4.52	5,781.08
Tools, carpenters' and wheelwrights' chests.....	1.2624 per 1,000 men per year.....	631	5.57	3,514.67
Tools, heading, sets of 3.....sets.....	0.048 per 1,000 men per year.....	24	.75	18.00
Tools, saddlors', chests of.....	1.2624 per 1,000 men per year.....	631	7.86	4,959.66
Tools, sets for sign painting.....	0.182 per 1,000 men per year.....	91	4.10	373.10
Torch, gasoline.....	0.002 per 1,000 men per year.....	1	3.37	3.37
Trimmers, tree.....	0.67 per division per year.....	16	2.52	40.32
Vise, blacksmith's.....	0.08 per 1,000 men per year.....	40	7.40	296.00
Vise, machinist's, 3 $\frac{1}{2}$ " jaw.....	0.24 per 1,000 men per year.....	120	6.38	765.60
Vise, 4".....	0.11 per division per year.....	3	7.50	22.50
Wedges, steel, 5-lb.....	0.46 per 1,000 men per year.....	230	.50	115.00
Wheels, carborundum, with fixtures.....	0.9 per 1,000 men per year.....	450	.93	418.50
Whetstones.....	0.24 per 1,000 men per year.....	120	.08	9.60
Whetstones, India, oil, 2" by 8".....	0.45 per division per year.....	11	1.08	11.88
Wrenches, lag, comb.....	1.79 per division per year.....	43	15.00	53.75
Wrenches, monkey, 8".....	0.24 per 1,000 men per year.....	120	.75	90.00
Wrenches, monkey, 12".....	0.09 per division per year.....	22	1.50	33.00
Wrenches, monkey, 12".....	0.598 per 1,000 men per year.....	299	1.15	343.85
Wrenches, monkey, 18".....	0.292 per 1,000 men per year.....	146	2.10	306.60
Wrenches, Stillson.....	0.278 per 1,000 men per year.....	139	1.25	173.75
Wrenches, type combination, 10".....	0.23 per 1,000 men per year.....	115	.85	97.75
				533,342.27

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

**MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:*  
Hydrometers, Baumé.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	19.80 per div. per year.	475

<b>COST BASIS:</b>	Net requirements.....	475
\$0.90 per set.	Total cost of net requirements.....	\$427.50

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

42 hydrometers, Baumé, issued per division.

19.80 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Unit price on latest order.

Estimate made by E. M. B.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION.

Appropriation:

Item name: Hospital furniture and equipment.

Total cost of net requirements..... \$52,619.75

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

See detailed sheets attached or Appendix No. 15.

## QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION—HOSPITAL FURNITURE AND EQUIPMENT.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require- ments.	Cost basis.	Total cost.
Acetylene lighting and heating unit (Par. 927½, M. M. D.).	0.24 for 25,000....	5	\$37.00	\$185.00
Acetylene outfit (A1).....	0.24 for 25,000....	5	25.00	125.00
Aircompressor, tankless and motion apparatus, Mueller 110 volt.	0.1 for 25,000....	2	105.00	210.00
Apparatus, anesthesia, intratracheal.....	2.4 for 25,000....	48	10.00	480.00
Apparatus, bone extension (Steinman), Catalogue No. 180.	0.2 for 25,000....	4	8.25	33.00
Apparatus, compressed air.....	0.2 for 25,000....	4	27.50	110.00
Apparatus, electric.....	0.2 for 25,000....	4	38.00	152.00
Apparatus for administration of serum (3-way stop cock with tubing).	0.2 for 25,000....	40	4.50	180.00
Apparatus, restraint.....	24 for 25,000....	480	17.00	8,160.00
Apparatus, suction.....	0.24 for 25,000....	5	16.00	80.00
Basins, white enamel, for operating room.....	144 for 25,000....	2,880	.48	1,382.40
Basins, hand, white enamel.....	480 for 25,000....	12,000	.24	2,880.00
Basins, for sponges, white enamel.....	120 for 25,000....	2,400	.55	1,320.00
Backrests.....	0.24 for 25,000....	5	1.20	6.00
Bells, call.....	1 for 25,000....	20	.45	9.00
Chairs, operating room, white enamel.....	1 for 25,000....	20	4.00	80.00
Chests, tool No. 1 (Par. 937) (one).....	2 for 25,000....	40	62.00	2,480.00
Chests, tool No. 2 (Par. 938).....	2.4 for 25,000....	48	33.30	1,598.40
Clocks.....	2 for 25,000....	40	3.20	128.00
Disinfectors, portable steam-type Kenyon-Frances.....	0.2 for 25,000....	4	2,750.00	11,000.00
Drums, nickel, sterilizing dressings, 9 in. diameter.....	0.24 for 25,000....	5	5.00	25.00
Drums, nickel, sterilizing dressings, 10 in. diameter.....	0.24 for 25,000....	5	5.50	27.50
Inhalers, chloroform.....	12 for 25,000....	240	1.00	240.00
Kamps, projections, 110 volts.....	0.24 for 25,000....	5	31.00	155.00
Mortars and pestles porcelain, 7 c. m.....	1 for 25,000....	20	.15	3.20
Mortars and pestles, Wedgewood, 8 c. m.....	0.5 for 25,000....	10	.29	2.90
Mortars and pestles, Wedgewood, 20 c. m.....	0.5 for 25,000....	10	1.00	10.00
Racks for urinals and bed pans.....	2.4 for 25,000....	48	3.50	168.00
Refrigerators, large.....	2 for 25,000....	40	75.00	3,000.00
Refrigerators, small.....	2 for 25,000....	40	34.00	1,360.00
Scales and weights, apothecaries metric system.....	0.24 for 25,000....	5	22.57	112.85
Scales and weights, metric, balance in glass case.....	0.24 for 25,000....	5	35.00	175.00
Screens, bedside, folding, wooden.....	6 for 25,000....	120	7.00	840.00
Sterilizers for dressings.....	0.24 for 25,000....	5	700.00	3,500.00
Sterilizers, instrument, Mueller, 110 volts.....	0.36 for 25,000....	7	72.00	504.00
Sterilizing outfits, combination, with steam boiler and one additional dressing sterilizer.	0.05 for 25,000....	1	1,565.00	1,565.00
Stretchers, wheel.....	2.4 for 25,000....	48	36.25	1,740.00
Stools, revolving, white enamel.....	1 for 25,000....	20	4.50	90.00
Tables, bakers' and cooks' 3' x 2' 6" high, K. D.....	0.24 for 25,000....	5	7.00	35.00
Tables, bedside, folding.....	120 for 25,000....	2,400	.60	1,440.00
Tables, dressing, rolling.....	1.2 for 25,000....	24	50.00	1,200.00
Tables, instrument, adjustable.....	0.2 for 25,000....	4	5.50	22.00
Tables, kitchen, 4' x 2' 6" high, K. D.....	0.24 for 25,000....	5	14.00	70.00
Tables, kitchen, 3' x 2' 6" high, K. D.....	0.2 for 25,000....	4	7.00	28.00
Tables, operating (post standard).....	0.2.....	4	130.00	520.00
Trays, bed, with legs.....	240 for 25,000....	4,800	.79	3,792.00
Trays, instrument, W. E.....	60 for 25,000....	1,200	.65	780.00
Tubs, bath, portable, on wheels.....	0.2 for 25,000....	4	42.00	168.00
Vision test set.....	0.24 for 25,000....	5	3.50	17.50
Ward dressing sets.....	2 for 25,000....	40	10.75	430.00
Total.....				52,619.75

**FISCAL YEAR 1920.**

### RAW MATERIALS DIVISION.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	2.496 per 1,000 men per year.....	<i>Pounds.</i> 1, 248

<b>COST BASIS:</b>	<b>Net requirements .....</b>	<b>1, 248</b>
<b>\$0. 25.</b>	<b>Total cost of net requirements.....</b>	<b>\$312</b>

Basis: 1,248 boxes, Hypoacid Kodak,  $\frac{1}{4}$  pound, as initial supply for Engineer troops, for 500,000 men. Estimated one year's supply.

### Recent purchases.

**FISCAL YEAR 1920.**

**M. AND E. M. DIVISION.**

	Strength.	Working basis.*	Requirements.
Initial equipment....	500	0.2 per 1,000 men.....	100

<b>Cost Basis:</b>	<b>Net requirements.....</b>	<b>100</b>
<b>\$26.50.</b>	<b>Total cost of net requirements.....</b>	<b>\$2, 650</b>

**This material is not in stock and is to be purchased to cover initial issue. Maintenance has already been figured on previous sheets.**

**Estimated or recent orders.**



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Instruments, drawing, field.

	Strength.	Working basis.*	Requirements.
			Sets.
Maintenance.....	500, 000	0.48 per 1,000 men per year.....	240
Total requirements.....			240
Cost BASIS: Net requirements.....			240
\$0.35. Total cost of net requirements.....			\$84

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 1,200 sets instruments as initial equipment for Engineer troops of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Instruments, drawing, lithographic.

	Strength.	Working basis.*	Requirements.
			Sets.
Maintenance.....	500, 000	0.48 per 1,000 men per year.....	24
Total requirements.....			24
Cost BASIS: Net requirements.....			24
\$20. Total cost of net requirements.....			\$480

\* "Working basis," is the quantity required per man or per unit for stated period ; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 24 sets instruments as initial supply for Engr. Tr. of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Instruments, drawing, office.

	Strength.	Working basis.*	Requirements.
			Sets.
Maintenance.....	500, 000	0. 042 per 1,000 men per year.....	21

Total requirements..... 21

Cost Basis: Net requirements..... 21  
\$37. Total cost of net requirements..... \$777

\*“ Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 104 sets instruments as initial equipment for Engr. Tr. of 500,000 men.  
Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name: Insulators, clamp.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat divisions, 4 base divisions.	129.5 per division per year.	3, 10

Cost Basis: Net requirements..... 3, 10  
\$0.21½ each. Total cost of net requirements..... \$668.2

\*“ Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
144 insulators, clamp, issued per division.  
129.5 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.      Item name:  
Insulators, with lag screw, Repp type.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat divisions, 4 base divisions.	1,264.95 per division per year.	30,359

Cost Basis:	Net requirements.....	30,359
\$67.00 per M.	Total cost of net requirements.....	\$2,034.05

\* "Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1,054 insulators, with lag screw, Repp type, issued per division.  
1,264.95 maintenance per division per year. Wastage for United States train-  
ing approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by office Chief Signal Officer.      Item name:  
Insulators, pigtail.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20-combat divisions, 4-base divisions.	73.5 per division per year.	1,764

Cost Basis:	Net requirements.....	1,764
\$0.21½ each.	Total cost of net requirements.....	\$379.26

\* "Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
(Insulators, pigtail, issued for division.)  
73.5 maintenance per division per year. Wastage for United States training  
approved by Chief Signal Officer.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by office Chief Signal Officer. *Item name:*  
Insulators, pony, plain.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20-combat divisions, 4-base divisions.	30.41 per division per year.	730

**COST BASIS:** Net requirements..... 730  
\$33.35 per M. Total cost of net requirements..... \$24.35

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

33.79 insulators, pony, plain, issued per division. 30.41 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Average contract price.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by office Chief Signal Officer. *Item name:*  
Insulators, porc. No. 4, with screws.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat divisions, 4 base divisions.	441 per division per year.	10,584

**COST BASIS:** Net requirements..... 10,584  
\$12.50 per M. Total cost of net requirements..... \$132.30

\*"Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

490 insulators, porc. No. 4, with screws, issued per division.  
441 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Average contract price.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by office Chief Signal Officer. *Item name:*  
Insulators, wooden knob, Fr. type 1½ inch.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat divisions, 4 base divisions.	7,681 per division per year.	184,344

Cost BASIS:	Net requirements.....	184,344
\$4.50 per M.	Total cost of net requirements.....	\$829.55

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

- STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
8,537.29 insulators, wooden knot, Fr. type 1½ inch, issued per division.  
7,681 maintenance per division per year, Wastage for United States training approved by Chief Signal Officer.
- STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Intensifier, tubes.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.672 per 1,000 men per year.....	336

Total requirements.....	336
-------------------------	-----

Cost BASIS:	Net requirements.....	336
\$0.15.	Total cost of net requirements.....	\$50.40

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

- STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 336 tubes, intensifier, as initial supply for Engr. tr. of 500,000 men.  
Estimated one year's supply.
- STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS, ITEM NO. 132.

SUBSISTENCE DIVISION.

Appropriation:                      Item name: Ice for preservation of stores.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	$\frac{1}{4}$ pound per man per day, 366 days.	45,750,000

Total requirements..... 45,750,000

Cost BASIS:    Net requirements..... 45,750,000  
\$0.35 per 100 lbs.    Total cost of net requirements..... \$160,125

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS.

Fixed by Army Regulations.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Price is based on actual cost.

4. GIVE METHOD OF ARRIVING AT SALVAGE AND RECLAMATION ESTIMATE:

Ice is used in quartermaster storehouses for preservation of perishable stores in such quantities as are actually necessary. It is estimated that it will require 1.4 pounds per man per day. This item covers the procurement of ice for the preservation of subsistence stores of a perishable nature. Issues are authorized for this purpose in such quantities as the commanding officer may order as necessary, and the quantities required depend upon the necessities of the service.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.      Item name: Jacks, cable reel.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	0.19 per div. per year..	5

COST BASIS:	Net requirements.....	5
\$39.82 each.	Total cost of net requirements.....	\$199.10

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
0.79 jacks, cable reel, issued per division 0.19 maintenance per division per year.    Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

M. & E. M. DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Knife, steel eraser.

	Strength.	Working basis.*	Requirements.
Initial equipment...	500	4.02 per 1,000 men.....	2, 010

COST BASIS:	Net requirements.....	2, 010
\$0.25.	Total cost of net requirements.....	\$502.50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 2,010 issued as initial supply for Engineer troops with Army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

### MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured in Engineers. *Item name:* Lamps, electric, two.

	Strength.	Working basis.*	Requirements.
Maintenance. ....	500, 000	0.012 per 1,000 men per year.....	6

Total requirements.....	6
Cost BASIS: Net requirements.....	6
\$2.50. Total cost of net requirements.....	\$15

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Authority: Issue tables, Chief of Engineers.  
 Basis: 32 lamps, as initial equipment for Engr. tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

### MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Procured in the past by Office of Chief Signal Officer. *Item name:* Lamps, flashlight.

	Strength.	Working basis.*	Requirements.
Maintenance. ....	20 combat div., 4 base div.	219.5 per div. per year	5, 268

Cost BASIS: Net requirements.....	5, 268
\$0.0725. Total cost of net requirements.....	\$381. 93

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 91.45 lamps, flashlight, issued per division. 219.5 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION.

Appropriation: Item name: Laboratory supplies.

Total cost of net requirements. . . . . \$265,282.77

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 9.

## QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require- ments.	Cost basis.	Total cost.
Acetone, Merck, blue label, in 1-pound c. s. b..	24 for 25,000.....	480	\$0.55	\$264.00
Acid:				
Acetic, Merck, blue label, 99.5 per cent, in 1-pound g. s. b.	.....do.....	480	.58	278.40
Butyric, Merck, white label, technical, absolute, in 1-ounce g. s. b.	12 for 25,000.....	240	.25	60.00
Citric, Merck, blue label, $\frac{1}{4}$ -pound c. s. b....	.....do.....	240	.30	72.00
Hydrobromic, Merck, white label, concentrated 34 per cent in 1-ounce g. s. b.	.....do.....	240	.175	42.00
Hydrochloric, Baker analyzed, C. P. specific gravity 1.19, in 1 and 6-pound g. s. b.	24 for 25,000.....	480	.39	187.20
Hydrofluoric, Baker analyzed, C. P., in 1-ounce ceresine bottles.	12 for 25,000.....	240	.17	40.80
Lactice, Merck, white label, V. S. P. specific gravity 1.21 at 15° C., in 1-ounce c. s. b.	.....do.....	240	.37	88.80
Metaphosphoric, Baker analyzed (contain sodium phosphate).	.....do.....	240	.60	144.00
Molybdic, Baker analyzed, 85 per cent, in 1-ounce c. s. b.	.....do.....	240	.50	120.00
Nitric, Baker analyzed, C. P., specific gravity 1.42, in 1 and 7-pound g. s. b.	48 for 25,000.....	960	.45	432.00
Oxalic, Merck, blue label, in $\frac{1}{4}$ -pound c.s.b..	12 for 25,000.....	240	.18	43.20
Phosphoric, Baker analyzed, C. P. sirupy, 85 per cent, in $\frac{1}{4}$ -pound g. s. b.	.....do.....	240	.40	96.00
Phosphotungstic, Merck, blue label (free from NH <sub>3</sub> and HNO <sub>3</sub> ), in 1-ounce g. s. b.	.....do.....	240	.85	204.00
Picric, Merck, white label, (20 per cent water), moist, in 4-ounce c. s. b.	.....do.....	240	.55	132.00
Picromic, Baker, in 1-ounce g. s. b.....	.....do.....	240	.80	192.00
Pyrogallol (pyrogallol).....	.....do.....	240	.45	108.00
Sulphanilic, Merck, blue label, in 1-ounce c. s. b.	.....do.....	240	.60	144.00
Sulphuric, in $\frac{1}{4}$ -pound bottle.....	.....do.....	5	.15	.75
Sulphuric, Baker, analyzed C. P., specific gravity 1.84, in 1 and 9-pound g. s. b.	72 for 25,000.....	1,440	.42	604.80
Tannic, Merck, blue label, in 1-ounce c. s. b..	12 for 25,000.....	240	.20	48.00
Thioacetic, Merck, blue label, in $\frac{1}{4}$ -pound c. s. b.	.....do.....	240	3.94	945.60
Trichloracetic, Merck, white label, U. S. P., in 1-ounce c. s. b. (bottles).	.....do.....	240	.40	96.00
Uric, special purity for standard, in 1-gram vials.	.....do.....	240	.75	180.00
Adapters, glass, curved (A10).....	14 for 25,000.....	280	.14	39.20
Adenotome (La Force) (catalogue No. 543).....	6 for 25,000.....	120	6.50	780.00
Agar-agar, prime white, in shreds for culture media, in 1-pound carton.	360 for 25,000.....	7,200	.90	6,480.00
Albuminometer (A15).....	12 for 25,000.....	240	.21	50.40
Albuminum from blood, Difco, in 1-pound cartons.	.....do.....	240	.76	182.40

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
<b>Alcohol:</b>				
Caprylic (Octyl), in 1-ounce c. s. b. ....	24 for 25,000 .....	480	\$1.00	\$480.00
Ethyl, 99.8 percent, absolute, in 1-pint c. s. b. ....	48 for 25,000 .....	960	.25	240.00
Methyl, acetone, free Merck, white label, in 1-pound c. s. b. ....	72 for 25,000 .....	1,440	.32	460.80
Methyl, 1 pound in bottles .....	48 for 25,000 .....	960	.32	307.20
Alizarine, sodium monosulphonate, in 1-ounce c. s. b. ....	12 for 25,000 .....	240	1.00	240.00
Aluminum (foil) in 1-ounce packages .....	.....do.....	240	.13	31.20
Ammonium acetate, Merck, blue label, in 1-pound g. s. b. ....	24 for 25,000 .....	480	1.25	600.00
Ammonium aluminum sulphate (alum), Baker analyzed, C. P. (Cryst), in 1-pound c. s. b. ....	.....do.....	480	.25	120.00
Ammonium carbonate, Merck, blue label, 1-pound g. s. b. ....	.....do.....	480	.25	120.00
Ammonium chloride, Merck, blue label, 1-pound g. s. b. ....	.....do.....	480	.22	105.60
Ammonium hydroxide, Baker analyzed, C. P. sp. gr., in 1 and 4 pound g. s. b. ....	12 for 25,000 .....	240	.45	108.00
Ammonium molybdate, Merck, blue label, in 1-ounce c. s. b. ....	.....do.....	240	.45	108.00
Ammonium nitrate, Merck, blue label, 1-pound g. s. b. ....	.....do.....	240	.20	48.00
Ammonium oxalate Merck, blue label, 1-pound g. s. b. ....	.....do.....	240	.44	105.60
Ammonium persulphate, Merck, blue label, 1-pound in g. s. b. ....	.....do.....	240	.58	139.20
Ammonium sulphocyanate, 1-ounce, c. s. b. ....	.....do.....	240	.46	110.40
Ammonium sulphate for nitrogen, standard, in 10-gram vials. ....	.....do.....	240	.10	24.00
Ammonium sulphate, Merck, blue label, in 1-pound c. s. b. ....	.....do.....	240	.35	84.00
Anatomical rubber stamps (A1950) (sets) .....	.....do.....	240	20.00	480.00
Aniline oil, water-white, for microscopic use, in ounce amber g. s. b. ....	36 for 25,000 .....	720	.10	72.00
Apron, laboratory (A25) .....	24 for 25,000 .....	480	.67	321.60
Arsenic trioxide, Merck, blue label, 1-pound g. s. b. ....	.....do.....	480	.25	120.00
Asbestos board (A30) (piece) .....	240 for 25,000 .....	4,800	.105	504.00
Asbestos, long-fiber, for Gooch crucible, in 1-pound cartons. ....	12 for 25,000 .....	240	3.00	720.00
Asbestos, mat, 1/8 inch thick (A35) .....	120 for 25,000 .....	2,400	.0054	12.96
Autoclave, copper, with hinged lid on sheet-iron base: inside dimensions, 11 inches diameter by 24 deep, with 2 baskets, to be heated with Khotal burner (A41). ....	24 for 25,000 .....	5	67.00	335.00
Autoclave of copper, oil heating (A41) (1) .....	.....do.....	5	67.00	335.00
Azolitmin, Merck, blue label, 1/2-ounce c. s. b. ....	240 for 25,000 .....	240	4.20	1,008.00
Bacto bile, Difco, in 1/2-kilo c. s. b. ....	72 for 25,000 .....	1,440	2.75	3,960.00
<b>Balance:</b>				
Analytical (A45) (1) .....	2 for 25,000 .....	4	70.00	280.00
Cover (A80) (1) .....	1 for 25,000 .....	20	1.30	26.00
Harvard trip (A65) (1) .....	24 for 25,000 .....	5	4.75	23.75
Laboratory (A55) .....	2 for 25,000 .....	4	25.00	100.00
Prescription (A61) (1) .....	.....do.....	4	6.00	24.00
Prescription, weights for .....	24 for 25,000 .....	5	3.25	17.25
<b>Balance weights:</b>				
Analytical (A50) .....	.....do.....	5	18.00	90.00
Troemner (A70) .....	.....do.....	5	6.50	32.50
Troemner (A60) .....	.....do.....	5	8.50	42.50
<b>Balance rests (A80) .....</b>	<b>12 for 25,000 .....</b>	<b>2</b>	<b>1.30</b>	<b>2.60</b>
Balsam, Canada, in Xylol, must be made from hard balsam, in 1-ounce c. s. b. ....	6 for 25,000 .....	120	.67	80.40
Band for supporting cylinder (A2) (1) .....	24 for 25,000 .....	5	.45	2.25
Barium chloride, Merck, blue label, in 1-pound c. s. b. ....	12 for 25,000 .....	240	.40	96.00
Barium hydroxide, Merck, blue label, crystalline, in 1-pound c. s. b. ....	.....do.....	240	.15	36.00
Barium nitrate, Merck, blue label, in 1-pound c. s. b. ....	.....do.....	240	.20	48.00
Barium sulphate, Merck, white label (free from soluble salts), C. P. powdered (for turbidity standards) in 1-ounce c. s. b. ....	.....do.....	240	.105	25.20
Baskets, of galvanized (not tinned) wire, for culture tubes (A100) (1). ....	60 for 25,000 .....	1,200	.25	300.00
<b>Beakers:</b>				
Pyrex glass, Griffin low form, with spout (A. H. T., No. 21850), 100 c. c., original cases contain 156 pieces (A105) (1). ....	120 for 25,000 .....	2,400	.135	\$24.00
Pyrex glass, Griffin low form, with spout (A. H. T., No. 21850), 250 c. c., original cases contain 168 pieces (A106) (1). ....	.....do.....	2,400	.171	410.40

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
<b>Beakers—Continued.</b>				
Pyrex glass, Griffin low form, with spout (A. H. T., No. 21850), 400 c. c., original cases contain 84 pieces (A107) (1).	120 for 25,000.....	2,400	\$0.243	\$583.20
Pyrex glass, Griffin low form, with spout (A. H. T., No. 21850), 600 c. c., original cases contain 72 pieces (A108) (1).	.....do.....	2,400	.175	420.00
Pyrex glass, Griffin low form, with spout (A. H. T., No. 21850), 800 c. c., original cases contain 48 pieces (A109) (1).	.....do.....	2,400	.25	600.00
Pyrex glass, Griffin low form, with spout (A. H. T., No. 21850), 1,000 c. c., original cases contain 48 pieces (A110) (1).	.....do.....	2,400	.40	960.00
Beef extract, Liebig's, $\frac{1}{2}$ -pound jars.....	48 for 25,000.....	960	.55	528.00
Bell glass, low form, with ground flange, 5 inches high by 8 inches in diameter, packed in original cases (A. H. T., No. 21924) (120) (1).	24 for 25,000.....	48	1.05	50.40
Benzene, crystallizable, water-white, in $\frac{1}{2}$ -pound c. s. b.	12 for 25,000.....	240	.15	36.00
Benzidine, for blood test, in 1-ounce c. s. b.	.....do.....	240	1.60	384.00
Bismarck brown, 10-gm. screw-cap vials.....	48 for 25,000.....	960	.15	144.00
Blocks, of red fiber, for embedding (A. H. T., No. 33844), $\frac{1}{2}$ by $\frac{1}{2}$ by $\frac{1}{2}$ inch (A125).	24 for 25,000.....	480	.025	12.00
Blocks, of red fiber, for embedding, (A. H. T., No. 33844), 1 by 1 by $\frac{1}{2}$ inch (A126) (1).	.....do.....	480	.06	28.80
Blood lancet (A127) (1).....	12 for 25,000.....	240	1.25	300.00
Bone chisel, McEvans (Lentz 583) (A1953).....	.....do.....	240	1.00	240.00
Bone-cutting forceps, $\frac{3}{4}$ inches (Lentz 531) (A1960).	.....do.....	240	3.00	720.00
Bone, gouge, Andrews (Lentz 568) (A1955).....	.....do.....	240	.95	228.00
Bone saw (A145).....	24 for 25,000.....	5	4.00	20.00
Bottles, balsam, with dropping rod loose in bottle and with glass cap, 45 c. c., packed 144 in original case (A. H. T., 22100) (A150).	4 for 25,000.....	80	.12	9.60
Bottle, dropping, T. K., 30 c. c. (A90).....	60 for 25,000.....	1,200	.12	144.00
<b>Bottles:</b>				
For specimens (A160).....	120 for 25,000.....	2,400	.03	72.00
French square, wide mouth, of flint glass, 8-ounce, capacity (A195).	200 for 25,000.....	4,000	.03542	141.68
Narrow mouth, 50 c. c. (A161).....	72 for 25,000.....	1,440	.02	28.80
Narrow mouth, green glass (A165).....	120 for 25,000.....	2,400	.25	600.00
Narrow mouth, of flint glass, 1,000 c. c. capacity (A180).	60 for 25,000.....	1,200	.43	516.00
Reagent complete, set of 41 bottles (A225).....	5 for 25,000.....	10	5.85	58.50
For specimens, extra wide mouth and very narrow shoulder, 4-ounce capacity.	120 for 25,000.....	2,400	.04	96.00
Specific gravity 10 c. c. (A1615).....	2 for 25,000.....	40	.75	30.00
Specific gravity 25 c. c. (A1616).....	.....do.....	40	.65	26.00
Weighing (A1910).....	12 for 25,000.....	12	.30	72.00
Woulfe, with two necks (A230).....	10 for 25,000.....	200	.75	150.00
Boxes, slide (A1600).....	72 for 25,000.....	1,440	.108	155.52
<b>Box:</b>				
For soap.....	1 for 25,000.....	20	.15	3.00
For matches.....	.....do.....	20	.15	3.00
Brilliant green, in 10-gm. screw-cap vials.....	12 for 25,000.....	240	.30	72.00
Brucine sulphate, Merck, white label, in $\frac{1}{2}$ -ounce vials.	.....do.....	240	.26	62.40
Bromine, U. S. P., in 1-ounce g. s. b., in tin container.	24 for 25,000.....	480	.25	120.00
<b>Brush:</b>				
Burette (A255).....	12 for 25,000.....	240	.10	24.00
Camel's hair, flat (A235).....	24 for 25,000.....	480	.28	134.40
Test tube (A245) (1).....	240 for 25,000.....	4,800	.02	108.00
<b>Brushes:</b>				
Camel's hair pencil, No. 5 (A240).....	48 for 25,000.....	960	.01	9.60
Flask (A250).....	.....do.....	960	.045	43.20
<b>Bulbs:</b>				
Rubber, 3 c. c. (A1465).....	240 for 25,000.....	4,800	.20	960.00
Rubber, 5 c. c. (A1466).....	.....do.....	4,800	.25	1,200.00
Burette, 50 c. c. in $\frac{1}{4}$ (A260) (1).....	6 for 25,000.....	120	.95	114.00
Burette support, Chaddock (A270) (1).....	0 for 25,000.....		2.00	
<b>Burner:</b>				
Acetylene (A275) (1).....	.....do.....		1.50	
Acetylene (stove) (A280) (1).....	.....do.....		4.60	
Alcohol (lamp) (A285) (1).....	.....do.....		.47	
Alcohol (stove) (A290).....	.....do.....		4.00	
Gas, Tirrill form (A300) (1).....	1 for 25,000.....	20	.65	13.00
Gasoline, blast (A330) (1).....	2 for 25,000.....	40	3.67	148.80
Kerosene, "Khotal" (A335) (1).....	0.24 for 25,000.....	5	5.90	29.50

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Calcium carbonate, marble chips, in 1-pound cartons.	12 for 25,000.....	240	\$0.07	\$16.80
Calcium chloride:				
Granular, for drying, in 1-pound bottles...	24 for 25,000.....	480	.18	86.40
Pure anhydrous lumps, in 1-pound c. s. b. ....	do.....	480	.40	192.00
Tubes (A350) (1).....	48 for 25,000.....	960	.08	76.80
Calcium hydroxide, Merck, Blue Label, dry powder (bottles) $\frac{1}{2}$ -pound c. s. b.	12 for 25,000.....	240	.19	45.60
Calcium hypochlorite, Baker, analyzed, C. P. (oxchloride), in 1-pound tins.	do.....	240	.80	192.00
Calcium oxide, Merck, Blue Label, from marble bottles, in 1-pound c. s. b.	do.....	240	.18	43.20
Cards, record (A361) (1).....	2,400 for 25,000.....	48,000	.002	96.00
Carbon disulphide, Merck, Blue Label, $\frac{1}{2}$ -pound c. s. b.	12 for 25,000.....	240	.18	43.20
Carbon tetrachloride, Merck, Blue Label, in 1-pound c. s. b.	do.....	240	.71	170.40
Carborundum stone (A360).....	6 for 25,000.....	120	.24	28.80
Cases, microscopical supplies, supplementary...	1 for 25,000.....	20	46.95	939.00
Casseroles, 85 m. m. (A365).....	12 for 25,000.....	240	.24	57.60
Catheters, male, german silver, No. 16 French scale (Kny. Scheerer D 2927) (A1963) (1).	do.....	240	.31	74.40
Cedar oil for immersion objectives, in 1-ounce c. s. b.	48 for 25,000.....	960	.20	192.00
Centrifuge, hand (370).....	2 for 25,000.....	40	6.75	270.00
Centrifuge tubes:				
Graduated (A480).....	120 for 25,000.....	2,400	.16	384.00
Ungraduated, 15 c. c. (A475) (1).....	200 for 25,000.....	4,000	.03	120.00
Centrifuge, water (A380).....	2 for 25,000.....	40	14.00	560.00
Charcoal, blood purified, Baker, in $\frac{1}{2}$ -pound c. s. b.	12 for 25,000.....	240	.79	189.60
Chisels, Veichows (Kny. Scheerer) (A127) (A1965).	do.....	240	2.25	540.00
Chlorinated eucalyptol, $\frac{1}{2}$ in g. s. a. c.....	1,200 for 25,000.....	24,000	.40	9,600.00
Cholesterin, Merck, Blue Label, in $\frac{1}{2}$ -ounce c. s. b.	12 for 25,000.....	240	6.40	1,536.00
Clamps, adjustable (A520).....	2 for 25,000.....	40	.20	8.00
Clamp:				
Busen (A500).....	do.....	40	.19	7.60
For test tubes (A525).....	12 for 25,000.....	240	.15	36.00
Hoffman, $\frac{1}{2}$ -inch (A530).....	2 for 25,000.....	40	.13	5.20
Clamp holder, adjustable (A515).....	do.....	40	.35	14.00
Clamp holders (A510).....	do.....	40	.14	5.60
Clamp (Mohr's pinchcock) (A535).....	144 for 25,000.....	2,880	.06	180.00
Clamps, universal (A505).....	2 for 25,000.....	40	.37	14.80
Chloroform, 8-ounce bottles.....	0 for 25,000.....		.25	
Cobalt, nitrate, Merck, Blue Label, 1-ounce package.	12 for 25,000.....	240	.21	50.40
Color comparison tubes:				
Nessler, 50 c. c. (A54).....	24 for 25,000.....	5	.50	2.50
Wessler, 100 c. c. (A542).....	2 for 25,000.....	40	1.05	42.00
Colorimeter, Dunning (A545).....	6 for 25,000.....	120	5.00	600.00
Condenser:				
Glass, Allihn (A560) (1).....	2 for 25,000.....	40	.89	35.60
Glass, Liebig (A555) (1).....	do.....	40	.67	26.80
Congo Red, 10 gm. screw-cap vials.....	12 for 25,000.....	240	.18	43.20
Copper oxide (black), Baker, analyzed, C. P., special (for haemotrxylin solutions) in 1-ounce c. s. b.	do.....	240	.17	40.80
Copper sulphate (cupric sulphate), Merck, Blue Label, crystals in 1-pound c. s. b.	do.....	240	.98	235.20
Copper sulphate, Merck, White Label, pure anhydrous, powder, in 1-ounce c. s. b.	do.....	240	.12	28.80
Corks, No. 2, $\frac{1}{8}$ -inch (A566).....	1,200 for 25,000.....	24,000	.0023	55.20
Corks:				
No. 3, $\frac{1}{8}$ -inch (A566).....	do.....	24,000	.0025	60.00
No. 4, $\frac{1}{8}$ -inch (A567).....	do.....	24,000	.0031	74.40
No. 5, $\frac{1}{8}$ -inch (A568).....	2,400 for 25,000.....	48,000	.002	96.00
No. 6, $\frac{1}{8}$ -inch (A569).....	1,200 for 25,000.....	24,000	.002	48.00
No. 7, $\frac{1}{8}$ -inch (A570).....	do.....	24,000	.0063	151.20
No. 8, $\frac{1}{8}$ -inch (A571).....	do.....	24,000	.0072	172.80
No. 10, $\frac{1}{8}$ -inch (A572).....	do.....	24,000	.005	120.00
No. 11, $\frac{1}{8}$ -inch (A573).....	do.....	24,000	.01	240.00
No. 12, $\frac{1}{8}$ -inch (A574).....	do.....	24,000	.012	288.00
No. 13, $\frac{1}{8}$ -inch (A575).....	do.....	24,000	.013	312.00
No. 14, $\frac{1}{8}$ -inch (A576).....	do.....	24,000	.0145	348.00
No. 15, $\frac{1}{8}$ -inch (A577).....	do.....	24,000	.0155	372.00
No. 16, $\frac{1}{8}$ -inch (A578).....	do.....	24,000	.02	480.00
No. 17, $\frac{1}{8}$ -inch (A379).....	do.....	24,000	.0225	540.00
No. 18, $\frac{1}{8}$ -inch (A380).....	do.....	24,000	.025	600.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
<b>Corks—Continued.</b>				
No. 20, 1 $\frac{1}{8}$ -inch (A581).....	1,200 for 25,000.....	24,000	\$0.03005	\$721.20
Short taper No. 16, 1 $\frac{1}{8}$ -inch (A590).....	do.....	24,000	.0145	348.00
Short taper No. 20, 1 $\frac{1}{8}$ -inch (A595) (1).....	do.....	24,000	.023	552.00
Cork borers (A600) (sets).....	6 for 25,000.....	120	1.98	237.60
Counting apparatus, Wolffhuegee (A615).....	3 for 25,000.....	60	3.00	180.00
Counting chamber, Fuchs-Rosenthale (A618).....	do.....	60	5.60	336.00
Counting plate, Jeffers (1).....	6 for 25,000.....	120	3.00	360.00
Crucible, filterings, Alundium (A640).....	3 for 25,000.....	60	.30	18.00
Crucible, Gooch, porcelain (A635).....	do.....	60	.195	11.70
Crucible holder, Spencer (A645).....	do.....	60	1.25	75.00
Crucible, porcelain (A625).....	12 for 25,000.....	240	.15	36.00
Crystal Violet, in 10-gm. screw cap vials.....	do.....	240	.28	67.20
Cylinder, glass, graduated, 25 c. c. (A650) (1).....	24 for 25,000.....	480	.20	96.00
Cylinder, glass, graduated, 100 c. c. (A651) (1).....	48 for 25,000.....	960	.27	259.20
<b>Cylinder:</b>				
Glass, graduated, 250 c. c. (A652).....	24 for 25,000.....	480	.38	182.40
Glass, graduated, 500 c. c. (A653).....	do.....	480	.52	249.60
Glass, graduated, 1,000 c. c. (A654).....	12 for 25,000.....	240	.80	192.00
Cylinders (mixing bottle) 1,000 c. c. (A 660)....	24 for 25,000.....	480	1.80	864.00
Desicator, Scheibler (A665) (1).....	60 for 25,000.....	1,200	4.00	4,800.00
Dextrose, in pound bottles.....	12 for 25,000.....	240	3.00	720.00
Dextrin, white, in $\frac{1}{4}$ -pound c. s. b.....	6 for 25,000.....	120	.15	18.00
Dextrose, analysis of Bureau of Standards as required for standardization, in 10-gm. vials.....	12 for 25,000.....	240	.10	24.00
Dextrose, Difco, anhydrous, in $\frac{1}{4}$ -pound c. s. b..	120 for 25,000.....	2,400	1.11	2,664.00
Diamond for writing on glass (A675).....	6 for 25,000.....	12	1.25	15.00
Dichloramin, T, 50 grams, in bottles.....	1,200 for 25,000.....	24,000	.65	15,600.00
Diphenylamine, Merck, blue label, in 1-ounce bottles.....	12 for 25,000.....	240	.56	134.40
Director, grooved, plated, 5 $\frac{1}{2}$ -inch (catalogue No. 158).....	0 for 25,000.....	0	.08	00.00
Dish culture, 150 by 15 (1) (A695).....	6 for 25,000.....	120	.30	36.00
Dishes, evaporation, 70 mm. in diameter (A680).....	36 for 25,000.....	720	.18	129.60
Dishes, evaporating, 100 mm. diameter (A681)(1).....	do.....	720	.28	201.60
Dish holder for Petri dishes.....	12 for 25,000.....	240	3.00	720.00
Dish, Petri, 100 by 15 mm. (A690).....	2,400 for 25,000.....	48,000	.145	6,960.00
Dish, stander, 30 mm. by 50 mm. (A700).....	12 for 25,000.....	240	.08	19.20
Dish, stander, 90 mm. by 60 mm. (A705).....	do.....	240	.10	24.00
Desiccator plate (A670) (1).....	60 for 25,000.....	1,200	.73	876.00
Dimethylaminoazobenzol, Meek, blue label in 10-gm. c. s. b.....	12 for 25,000.....	240	.48	115.20
Dishes, evaporating, 215 mm. diameter (A682).....	36 for 25,000.....	720	.88	633.60
Distilling apparatus, Stokes automatic (A710).....	24 for 25,000.....	5	25.00	125.00
Double-control valve, for cylinder (A3).....	7 for 25,000.....	140	2.00	280.00
Emery flour for grinding stop cock, etc., in 1-pound c. s. b.....	1 for 25,000.....	20	.28	5.60
Emery paper (A715).....	144 for 25,000.....	2,880	.02	57.60
Eosin, water soluble, in 109-m. screw-cap vials.....	48 for 25,000.....	960	.21	201.60
Erythrosene, in 10-gram screw-cap vials.....	12 for 25,000.....	240	.48	115.20
Ether, anhydrous, distilled over sodium aquibb reagent in 1-pound c. s. b.....	12 for 25,000.....	240	1.10	264.00
<b>Extraction:</b>				
Thimbles, 9 lundum (A720).....	12 for 25,000.....	240	.55	132.00
Thimbles, Whatman (A725).....	12 for 25,000.....	240	.12	28.80
Tubes, Roxhlet (A730).....	12 for 25,000.....	240	1.25	300.00
File, triangular, 4-inch (1).....	2 for 25,000.....	40	.07	2.80
<b>Files:</b>				
Triangular, 8-inch (A736).....	36 for 25,000.....	720	.15	108.00
Triangular, 8-inch (9736).....	36 for 25,000.....	720	.15	108.00
Round, 6 inches long (A740).....	12 for 25,000.....	240	.20	48.00
Filter apparatus, complete, 5 inches by 1 inch (A750) (1).....	6 for 25,000.....	12	2.80	33.60
<b>Filter:</b>				
Bougie, only, 5 inches by 1 inch (A756).....	6 for 25,000.....	120	2.00	240.00
Bougie, only, 8 inches by 1 inch (A755).....	6 for 25,000.....	12	2.40	28.80
Glass cylinder only, 5 $\frac{1}{2}$ by 2 $\frac{1}{2}$ inches (A761).....	6 for 25,000.....	120	.39	4,680.00
Glass cylinders, only, 11 by 2 $\frac{1}{2}$ inches (A760).....	6 for 25,000.....	120	.60	72.00
Filtering apparatus, complete, 8 inches by 1 inch (A745).....	6 for 25,000.....	12	3.40	40.80
<b>Filter pump:</b>				
Coupling (A770).....	24 for 25,000.....	5	.35	1.75
Richards, of brass (A765).....	24 for 25,000.....	5	1.25	6.25
Filter tube, glass (A775).....	6 for 25,000.....	120	.45	54.00
<b>Flasks:</b>				
Distillation, of Pyrex glass, 500 c. c. capacity (A830).....	36 for 25,000.....	720	.40	288.00
Distillation, of Pyrex glass, 1,000 c. c. capacity (A831).....	36 for 25,000.....	720	.50	360.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
<b>Flasks—Continued.</b>				
Erlenmeyer, of Pyrex glass 50 c. c. (A789)...	60 for 25,000.....	1,200	\$ .07	\$84.00
Erlenmeyer, of Pyrex glass, 150 c. c. (A781)...	60 for 25,000.....	1,200	.09	108.00
Erlenmeyer, of Pyrex glass, 250 c. c. (A782)...	60 for 25,000.....	1,200	.10	120.00
Erlenmeyer, of Pyrex glass, 500 c. c. (A783)...	6 for 25,000.....	1,200	.15	180.00
Erlenmeyer, of Pyrex glass, 1,000 c. c. (A784)...	60 for 25,000.....	1,200	.20	240.00
Erlenmeyer, of Pyrex glass, 2,000 c. c. (A785)...	60 for 25,000.....	1,200	.27	324.00
Filtering, Erlenmeyer shape, 500 c. c. (A795)...	60 for 25,000.....	1,200	.35	420.00
Filtering, Erlenmeyer shape, 1,000 c. c. (A795)...	12 for 25,000.....	240	.32	76.80
Of Pyrex glass, 300 c. c. (A800).....	120 for 25,000.....	2,400	.12	288.00
Of Pyrex glass, 1,000 c. c. (A801).....	120 for 25,000.....	2,400	.50	1,200.00
<b>Flasks, volumetric:</b>				
10 c. c. capacity (A815).....	36 for 25,000.....	720	.25	180.00
25 c. c. capacity (A816).....	36 for 25,000.....	720	.30	216.00
100 c. c. capacity (A817).....	36 for 25,000.....	720	.35	252.00
250 c. c. capacity (A818).....	36 for 25,000.....	720	.50	360.00
500 c. c. capacity (A819).....	36 for 25,000.....	720	.65	468.00
1,000 c. c. capacity (A820).....	36 for 25,000.....	720	1.50	1,080.00
<b>Forceps:</b>				
Cover glass, Navy (A850).....	24 for 25,000.....	48	.45	21.60
Fine, dissecting (A861).....	24 for 25,000.....	48	.45	21.60
Fixation, with catch (catalogue No., 585)...	6 for 25,000.....	120	1.25	150.00
Fixation, without catch, nonmagnetic (catalogue No., 585.1)...	6 for 25,000.....	120	1.25	150.00
Heavy, 130 mm. long (A855).....	24 for 25,000.....	48	.33	15.84
Iris, angular, mouse toothed (catalogue No., 586)...	6 for 25,000.....	120	1.10	132.00
Iris, curved (catalogue No., 586.2).....	6 for 25,000.....	120	1.25	150.00
Iris, straight (catalogue No., 586.1).....	6 for 25,000.....	120	1.00	120.00
Medium fine (A860).....	2 for 25,000.....	40	.29	11.60
Mouse tooth, thumb 6 inches (Lentz 834) (A1967)...	24 for 25,000.....	480	.55	264.00
Stones, tissue, 5-inch (Lentz 803) (A1970)...	24 for 25,000.....	480	.75	360.00
Fuchsin acid, just be soluble, sodium for Andrade indicator, in 10-gm. screw-cap vials.	120 for 25,000.....	2,400	.30	720.00
Fuchsin, basic, 10-gm. screw-lock vials.....	480 for 25,000.....	9,600	.30	2,880.00
<b>Funnel, enamel:</b>				
8.5 c. m.....	6 for 25,000.....	120	.20	24.00
11 c. m.....	6 for 25,000.....	120	.25	30.00
<b>Funnels, glass:</b>				
50 mm. (A865).....	12 for 25,000.....	240	.11	26.40
With 60° angle ground rims, 75 mm. diam..	24 for 25,000.....	480	.12	57.60
65 mm. (A866).....	12 for 25,000.....	240	.12	28.80
90 mm. (A867).....	12 for 25,000.....	240	.15	36.00
<b>Funnels, separatory:</b>				
250 c. c. (880).....	do.....	240	1.10	264.00
Squibb (A885).....	2.4 for 25,000.....	48	1.40	67.20
Funnel stop (A1180).....	12 for 25,000.....	240	.45	108.00
Funnel support (A870).....	0.24 for 25,000.....	5	.70	3.50
Gasometer scale.....	60 for 25,000.....	1,200	1.00	1,200.00
Gas generator, Kipp (A890).....	0.24 for 25,000.....	5	0.60	30.00
Gelatine Difco for culture media, in 1-pound cartons.	48 for 25,000.....	960	.51	489.60
Gentian violet, in 10-gm. screw-cap vials.....	960 for 25,000.....	19,200	.25	4,800.00
Glass beads, hollow (A900), pounds.....	2 for 25,000.....	40	1 1.75	70.00
<b>Glass rod:</b>				
4-mm. (A905), pounds.....	12 for 25,000.....	240	1.23	52.80
6-mm. (A906), pounds.....	do.....	240	1.20	48.00
8-mm. (A907), pounds.....	36 for 25,000.....	720	1.19	138.00
<b>Glass tubing:</b>				
6-mm. diameter (A1000).....	120 for 25,000.....	2,400	.40	960.00
10-mm. diameter (A1001).....	do.....	2,400	.15	360.00
Soft, for bending each piece, 30 cm. long, mm. diameter.	60 for 25,000.....	1,200	.20	240.00
Glass, cool, medium, in pound cartons.....	1 for 25,000.....	20	2.50	50.00
Gloves, rubber (1475), pairs.....	144 for 25,000.....	2,880	.35	1,008.00
Goggles, auto, Wilson, M1 (A1020).....	0.24 for 25,000.....	5	1.25	6.25
Gold chloride, Merck, white label, in 15-grain ampoules, 44 c. ampoule.	12 for 25,000.....	240	.45	108.00
Graduate, 1-ounce, 30 c. c. capacity of glass (A1021).....	24 for 25,000.....	480	.25	120.00
Graduate, 250 c. c.....	do.....	280	.25	120.00
Grooved director (Lentz, 968) (A1984).....	12 for 25,000.....	240	.25	60.00

1 Per pound.



## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Grooved director (Lentz, 968) 4½ inches long (A1983).	12 for 25,000.....	240	\$ .15	\$36.00
Gualac resin, in ½-pound c. s. b. bottles.....	.....do.....	240	.40	96.00
Hæmacytometer (A1035).....	2 for 25,000.....	40	15.00	600.00
Hæmacytometer:				
Extra cover slips (A1038).....	36 for 25,000.....	720	.315	228.80
Extra white corpuscle, pipettes (A1037)....	6 for 25,000.....	120	1.05	126.00
With Bureau of Standards certificate (A1040).	3 for 25,000.....	60	24.00	1,440.00
Hæmaglobinometers, Tallquist scale (A1025)...	36 for 25,000.....	720	.85	612.00
Hæmatoxylen, in 10-gm. screw-cap vials.....	480 for 25,000.....	9,600	.20	1,920.00
Hammer, steel, autopsy, Lentz, 5615 (A1937)...	1.2 for 25,000.....	24	2.25	54.00
Hemostate:				
Halsted's, Lentz, 872 (H1977).....	24 for 25,000.....	480	1.50	720.00
Jones, Lentz, 901 (H1975).....	.....do.....	480	.85	408.00
Holder, sponge, oval blades, 8½ inches, screw lock, catalogue No. 126.	60 for 25,000.....	1,200	1.25	1,500.00
Hook:				
Iris (Tyrill), sharp, catalogue No. 984.....	5 for 25,000.....	100	1.00	100.00
Tenotomy, medium size, catalogue No. 575..	2 for 25,000.....	40	.75	30.00
Tenotomy (Smith), catalogue No. 575.....	5 for 25,000.....	100	1.10	110.00
Hydrargyri oxidum flavum, 1-ounce, in bottles.	36 for 25,000.....	720	.20	144.00
Hyoscini hydrobromidum, 0.065 mgm. hypo tablets, 20 in tube...	200 for 25,000.....	4,000	.10	400.00
Illuminator, dark ground (A1175).....	0.24 for 25,000.....	5	12.15	60.75
Incubator, bacteriological, thermometer for, No. 483607 (A1061).	.....do.....	5	5.00	25.00
Incubator, inside dimensions 19 by 12 by 10 inches (A1061).	.....do.....	5	107.00	535.00
Inulin, Mulford, in 10-gm. c. s. b. ....	15 for 25,000.....	300	2.50	750.00
Iron (IC) and ammonium sulphate (alum), Merck, blue label, in ½-pound c. s. b.	12 for 25,000.....	240	.25	60.00
Iron (OUS) and ammonium sulphate, Merck, blue label, in ½-pound c. s. b.	.....do.....	240	.20	48.00
Iron, metallic, wire, Baker, analyzed for standardization, in 1-ounce spools.	.....do.....	240	.20	48.00
Iron (OUS) sulphate, Merck, blue label, in 1-pound c. s. b.	.....do.....	240	.38	91.20
Iron (OUS) sulphide, fused sticks for H <sub>2</sub> S, in 1-pound c. s. b.	.....do.....	240	.25	60.00
Irrigator, anterior chamber, with sterling silver tip, catalogue No. 693.	6 for 25,000.....	120	.55	66.00
Jars:				
Coplen (A1075).....	72 for 25,000.....	1,440	.125	180.00
Lighting (A1070).....	120 for 25,000.....	2,400	.06	144.00
Kjeldahl connecting bulbs (A1100).....	36 for 25,000.....	720	.30	216.00
Knife:				
Brain (A1105).....	12 for 25,000.....	240	2.20	528.00
Paracentesis, small, light flexible shank, catalogue No. 533.	6 for 25,000.....	120	.55	66.00
Amputations, Liston's long (Lentz 430) (A1987).	1 for 25,000.....	20	2.50	50.00
Cartilage, 5½-inch, all steel blade and handle (A1935).	.....do.....	20	.45	9.00
Labels, micro, in books of 500 (A1110).....	48 for 25,000.....	960	.40	384.00
Labels for bottles in books of 25 sheets (A1115)..	24 for 25,000.....	480	.085	40.80
Lactose, Difco powder, free from dextrose, in 1-pound c. s. b.	72 for 25,000.....	1,440	2.16	3,110.40
Lead acetate:				
Baker, analyzed, C. P., basic dry, in ½-pound c. s. b.	12 for 25,000.....	240	.23	55.20
Merck blue label, in ½-pound c. s. b. ....	.....do.....	240	.23	55.20
Lead nitrate, C. P. Baker, analyzed, in ½-pound c. s. b.	.....do.....	240	.15	36.00
Lead shot, size No. 6 (A1125).....	2.4 for 25,000.....	48	.15	7.20
Lid plate (Jaeger), hard rubber, catalogue No. 596.	6 for 25,000.....	120	.15	18.00
Litmus paper, Squibbs, in glass vials of 100 strips each (red or blue).	240 for 25,000.....	4,800	1.15	720.00
Litmus, powdered, Merck blue label, in ½-pound c. s. b.	48 for 25,000.....	960	.60	576.00
Microscope, field, with accessory cases (par. 950).	0.2 for 25,000.....	4	75.15	300.60
Magnesia, citrate of.....	12 for 25,000.....	240	.45	108.00
Magnesium chloride, Merck blue label, in ½-pound c. s. b.	.....do.....	240	.16	38.40
Magnesium oxide, Merck blue label, contains about 0.001 per cent of SO, in 1-ounce c. s. b.	.....do.....	240	.22	52.80
Magnesium sulphate, Merck blue label, in 1-pound c. s. b.	.....do.....	240	.22	52.80

¹ Per vial.

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Magnifier, hand (A1130).....	24 for 25,000.....	48	\$3.83	\$183.84
Mailing case (A1140).....	120 for 25,000.....	2,400	.175	420.00
Mailing case:				
Typhoid (A1150).....	480 for 25,000.....	9,600	.155	1,488.00
Bacteriological, takes 150 by 18 mm. culture tube.	120 for 25,000.....	2,400	.11	264.00
Wasserman (A1145).....	1,200 for 25,000.....	24,000	.03	720.00
Mallet, boxwood plane (Kny-Scheerer A324) (A1990).	12 for 25,000.....	24	.90	21.60
Maltose, in 10-gm. c. s. b.....	do.....	240	1.10	264.00
Mandrin, metal, with retaining spring handle, coude beak.	3 for 25,000.....	60	.23	13.80
Manganous chloride, Merck blue label, in 1-pound c. s. b.	12 for 25,000.....	240	.72	172.80
Mannite, Merck blue label, in 1-pound carton...	do.....	240	4.20	1,008.00
Mechanical stage (A1165).....	0.24 for 25,000.....	5	17.55	87.75
Mercury (IC) chloride (mercury bichloride, Baker analyzed, C. P., in 1-ounce c. s. b.	12 for 25,000.....	240	.87	208.80
Mercury (IC) iodide, red, C. P., Baker analyzed, in 1-ounce c. s. b.	do.....	240	.76	182.40
Mercury, metallic, redistilled, in 5-pound jugs.	do.....	240	10.00	2,400.00
Mercury (IC) oxide, red, Baker analyzed, C. P., in 1-pound c. s. b.	do.....	240	.95	228.00
Methyl orange indicator, in 1-ounce c. s. b.....	do.....	240	.18	43.20
Methyl red, Hynson, Wescott & Dunning, in 1-gm. vials, sufficient for 1-liter solution.	do.....	240	.16	38.40
Methvlene blue, in 10-gm. screw-cap vials.....	720 for 25,000.....	14,400	.18	2,592.00
Micro lamp, complete.....	24 for 25,000.....	5	4.50	22.50
Microscopes (A1155).....	0.24 for 25,000.....	5	81.00	405.00
Microtome:				
Automatic, laboratory, Spencer, with object clamp for paraffine or celluloidine, but without knife (A1240).	0.2 for 25,000.....	4	29.75	119.00
Block stop, coarse (A1246).....	do.....	4	1.80	7.20
Block stop, fine (A1247).....	do.....	4	1.80	7.20
Clinical, Bausch & Lomb, No. 3054 (A1235).	0.24 for 25,000.....	5	17.55	87.75
Dressing for stopps (A1248).....	1.44 for 25,000.....	29	.25	7.25
Freezing attachment (A1243).....	0.24 for 25,000.....	5	9.00	45.00
Freezing attachment, Bausch & Lomb, No. 3082 (A1237).	do.....	5	9.00	45.00
Microtome knife:				
Automatic microtome (A1241).....	0.5 for 25,000.....	10	5.00	50.00
Bausch & Lomb, No. 3092 (A1238).....	0.24 for 25,000.....	5	5.20	26.00
Back (A1242) (1).....	0.5 for 25,000.....	10	.90	9.00
For rotary microtome (A1216).....	0.3 for 25,000.....	6	6.50	39.00
Microtome-knife handle, Bausch & Lomb, No. 3098 (A1217).	0.48 for 25,000.....	10	1.58	15.80
Microtome-knife hone (A1245).....	1.44 for 25,000.....	29	1.32	38.28
Microtome rotary (A1215).....	0.08 for 25,000.....	1	75.50	75.50
Microtome freezing attachment, cylinder, for 25 pounds of Co. (A1244).	3 for 25,000.....	60	9.00	540.00
Mirrors, laryngeal, boilable, sizes 1 and 2 of each (catalogue, No. 537).	2.4 for 25,000.....	48	.35	16.80
Mortars and pestle (A1300).....	0.24 for 25,000.....	5	.90	4.50
Mortars:				
Porcelain (A1306).....	3 for 25,000.....	60	.28	16.80
Porcelain, 66 mm. (A1305).....	1.2 for 25,000.....	24	.19	4.56
Mortar, wedgwood, with pestle (A1310).....	0.24 for 25,000.....	5	.58	2.90
Mortar porcelain (A1307).....	3 for 25,000.....	60	.67	40.20
Napthol, Resorcin, in 1-ounce c. s. b.....	12 for 25,000.....	240	.50	120.00
Napthylamine (Alpha) Baker, in 1-ounce c. s. b.	do.....	240	.58	139.20
Needle holder (A1320).....	6 for 25,000.....	120	.60	72.00
Needles:				
Autopsy (Lentz 5624) (A1993).....	144 for 25,000.....	2,880	.12	345.60
Inoculating.....	12 for 25,000.....	240	.65	156.00
Needle, utricule, silver, to fit standard Leur syringe (catalogue No. 230).	30 for 25,000.....	600	.432	259.20
Neutral red, in 10-gm. screw-cap vials.....	60 for 25,000.....	1,200	.75	900.00
Normal saline solution, tablets, 200 in bottle....	6 for 25,000.....	120	.13	15.60
Oilstone (A1325).....	1 for 25,000.....	20	.19	3.80
Opli pulvis, 2-ounce, in bottles.....	72 for 25,000.....	1,440	2.50	3,600.00
Ophthalmoscope:				
Loring (catalogue No. 597).....	4 for 25,000.....	80	5.00	400.00
Electric (catalogue No. 597.1).....	0.2 for 25,000.....	4	12.35	49.40
Orthotoliden, recrystallized, in 1-ounce c. s. b....	12 for 25,000.....	240	.97	232.80
Otoscope, pneumatic (Siegel), metal, with threespecula (catalogue No. 532).	6 for 25,000.....	120	2.20	264.00
Oven, copper (A1330).....	1 for 25,000.....	20	4.75	95.00



## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
<b>Paper, filtering:</b>				
100-mm. diameter (A1350).....	1,200 for 25,000.....	24,000	\$0.08	\$1,920.00
Acid washed, close texture (A1365), 100 sheets in package.	12 for 25,000.....	240	.96	230.40
Alpha brand (A1345).....	6,000 for 25,000.....	120,000	.0115	1,380.00
Folded, free from chlorine and acids, 100 sheets in package (A1380).	12 for 25,000.....	240	.64	153.60
Hardened, for great pressure (A1375), 100 sheets in package.	24 for 25,000.....	480	15.76	7,564.80
150-mm. (packages).....	1,200 for 25,000.....	24,000	.15	3,600.00
For blotting slides, 2 x 2.....	do.....	24,000	.01	240.00
For blotting slides, 480 by 480 mm.....	480 for 25,000.....	9,000	.01	96.00
Qualitative circles, 100-mm. (A1350), 100 sheets in package.	12 for 25,000.....	240	.10	24.00
Qualitative circles, 125-mm. (A1351), 100 sheets in package.	do.....	240	.21	50.40
Qualitative circles, 180-mm. (A1352), 100 sheets in package.	do.....	240	.36	86.40
Qualitative circles, 200-mm. (A1353), 100 sheets in package.	do.....	240	.46	110.40
Qualitative circles, 250-mm. (A1353), 100 sheets in package.	do.....	240	.45	108.00
Qualitative sheets (quires) (A1360).....	24 for 25,000.....	480	.011	5.28
Round, 10-inch, packages.....	264 for 25,000.....	5,280	.49	2,587.20
<b>Paper:</b>				
Lens, 100 sheets in package (A1385).....	24 for 25,000.....	480	.20	96.00
Oiled, 5 yards in roll.....	400 for 25,000.....	6,000	.11	660.00
Paraffine, hard, M. P., 52° C., in cakes of approximately 1 pound, wrapped in paper.	120 for 25,000.....	2,400	.20	480.00
Parlodion, for embedding, in 1-ounce c. s. b.....	12 for 25,000.....	240	.60	144.00
<b>Pencils, wax:</b>				
Red (A1395).....	240 for 25,000.....	4,800	.12	576.00
Blue (A1396).....	do.....	4,800	.12	576.00
Peptone, Difco, in ½-pound c. s. b.....	120 for 25,000.....	2,400	1.75	4,200.00
Phenol, C. P., loose crystals, Baker, analyzed, in ½-pound g. s. b.	24 for 25,000.....	480	.40	192.00
Phenolphthalein, Merck blue label, in 1-ounce c. s. b.	do.....	480	.60	288.00
Phenolsulphonephthalein, for colorimeter tests, Hynson, Westcott & Dunning, in ampoules of 1.6 mg., 10 in box.	do.....	480	.75	360.00
Phenolsulphonephthalein, Hynson, Westcott & Dunning, dry, in 5-gm. vials.	do.....	480	7.50	3,600.00
Phenylenediamine (meta), Merck white label, in 10-gm. c. s. b.	12 for 25,000.....	240	.40	96.00
Phenylhydrazine hydrochloride, Merck white label, in 1-ounce g. s. b.	do.....	240	.85	204.00
Phloroglucin, Merck blue label, in 1-ounce g. s. b.	do.....	240	5.90	1,416.00
Phthalic anhydride, in ½-ounce cartons.....	do.....	240	1.35	324.00
<b>Pipettes:</b>				
1-c. c., in 1/100ths (A1405).....	60 for 25,000.....	1,200	.18	216.00
10-c. c., in 1/10ths (A1406).....	do.....	1,200	.15	180.00
Barnes, for narrow mouth bottles, 50-c. c. capacity.	do.....	1,200	.20	240.00
1-c. c., graduated in 1/1000th.....	do.....	1,200	.05	60.00
Dropping, 10-c. m. (1).....	120 for 25,000.....	2,400	.10	240.00
<b>Pipettes, volume, bulb in middle:</b>				
2-c. c. (A1410).....	60 for 25,000.....	1,200	.07	84.00
3-c. c. (A1411).....	30 for 25,000.....	600	.07	42.00
5-c. c. (A1412).....	120 for 25,000.....	2,400	.08	192.00
10-c. c. (A1413).....	do.....	2,400	.09	216.00
20-c. c. (A1414).....	60 for 25,000.....	1,200	.15	180.00
25-c. c. (A1415).....	24 for 25,000.....	480	.15	72.00
30-c. c. (A1416).....	do.....	480	.20	96.00
5-c. c. (A1416).....	do.....	480	.20	96.00
100-c. c. (A1417).....	12 for 25,000.....	240	.23	55.20
<b>Pipettes, volume, without bulb:</b>				
0.5-c. c. (A1420).....	600 for 25,000.....	12,000	.05	600.00
1-c. c. (A1421).....	1,200 for 25,000.....	24,000	.05	1,200.00
Pipette box (A1425).....	24 for 25,000.....	48	.95	45.60
Plate, lead, No. 19 gauge, 12 by 12 inches.....	do.....	48	.25½	12.24
Pliers (A1430).....	24 for 25,000.....	480	1.00	480.00
Potassium carbonate, Merck blue label, in 1-pound g. s. b.	do.....	480	1.75	840.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Potassium chlorate, Merck blue label, in ½-pound c. s. b.	24 for 25,000.....	480	\$0.30	\$144.00
Potassium chromate, Merck blue label, in ½-pound c. s. b.	12 for 25,000.....	240	.45	108.00
Potassium cyanide mixture, lump, 98-100 per cent, Baker analyzed, in 1-ounce c. s. b.	.....do.....	240	.12	28.80
Potassium bichromate, Merck blue label, in 1-pound c. s. b.	24 for 25,000.....	480	1.10	528.00
Potassium ferricyanide, Merck blue label, in ½-pound c. s. b.	12 for 25,000.....	240	.70	168.00
Potassium ferrocyanide, Merck blue label, in ½-pound c. s. b.	.....do.....	240	.70	168.00
Potassium hydroxide, Merck blue label, pure by baryta, in ½-pound c. s. b.	72 for 25,000.....	1,440	.65	936.00
Potassium, iodate, Merck blue label, in 1-ounce c. s. b.	12 for 25,000.....	240	.60	144.00
Potassium, iodide, Merck blue label, in ½-pound c. s. b.	24 for 25,000.....	480	1.25	600.00
Potassium nitrate, Merck blue label, in ½-pound c. s. b.	12 for 25,000.....	240	.39	93.60
Potassium oxalate, neutral, Merck blue label, in ½-pound c. s. b.	.....do.....	240	.50	120.00
Potassium permanganate, Merck blue label, in ½-pound c. s. b.	.....do.....	240	1.00	240.00
Potassium phosphate (di-hydrogen) Baker analyzed, C. P., in 1-ounce c. s. b.	.....do.....	240	.25	60.00
Potassium sulphate, Merck blue label, in 1-pound c. s. b.	.....do.....	240	.85	204.00
Potassium sulphocyanate, Merck blue label, in ½-pound c. s. b.	.....do.....	240	2.10	504.00
Probe, lachrymal, double ended (Theobald), German silver (catalogue, No. 590).	6 for 25,000.....	120	2.15	258.00
Probe, silver plated:				
8 inches long (Lentz 958) (A1995).....	12 for 25,000.....	240	.20	48.00
10 inches long (Lentz 960) (A1996).....	.....do.....	240	.30	72.00
Pumice stone, lumps.....	.....do.....	240	.07	16.80
Pyrene fire extinguishers (A1445).....	0.6 for 25,000.....	12	5.00	60.00
Racheotome, Kny-Schierer (A97) (A2000).....	12 for 25,000.....	240	1.25	300.00
Rachiotomy saw, with double blades and guide, handle adjustable, Kny-Schierer (A774) (A1997).	1 for 25,000.....	20	8.00	160.00
Resorcin, recrystallized, U. S. P., Merck blue label, in 1-ounce cartons.	24 for 25,000.....	480	.55	264.00
Retinoscope, medium size, plain (catalogue, No. 599).	3 for 25,000.....	60	.65	39.00
Rings, for support, with iron base:				
68-mm.....	1 for 25,000.....	20	.20	4.00
96-mm.....	.....do.....	20	.12	2.40
Rings, suberite (A1685).....	6 for 25,000.....	120	.45	54.00
Rings, support:				
2½-inch (A1450).....	2 for 25,000.....	40	.09	3.60
3½-inch (A1451).....	.....do.....	40	.12	4.80
4½-inch (A1452).....	.....do.....	40	.15	6.00
Rods, stirring:				
20 cm. long by 4.3 mm. diameter.....	60 for 25,000.....	1,200	.25	300.00
25 cm. long by 8 mm. diameter.....	.....do.....	1,200	.25	300.00
Rubber bulbs:				
1½-inch diameter (A1470).....	120 for 25,000.....	2,400	.10	240.00
1½-inch diameter (A1471).....	72 for 25,000.....	1,440	.15	216.00
Rubber rings (A895).....	12 for 25,000.....	240	.18	43.20
Rubber rings, only to fit Kipp gas generator (A890a).	6 for 25,000.....	120	.30	36.00
Rule:				
Slide (A1605).....	0.7 for 25,000.....	14	3.85	53.90
Steel (A1560).....	2 for 25,000.....	40	.55	22.00
Saccharometer, Einhorn's (A1565).....	2.4 for 25,000.....	48	1.50	72.00
Sacchrose, Merck white label, highest purity, in 1-pound c. s. b.	36 for 25,000.....	720	1.22	878.40
Safranin, in 10-gm. screw-cap vial.....	240 for 25,000.....	4,800	.28	1,344.00
Saponin, Merck white label, water soluble, in 1-ounce vials.	12 for 25,000.....	240	.99	237.60
Scalpels, dissecting:				
25-mm. length of blade (A1570).....	24 for 25,000.....	480	.32	153.60
45-mm. length of blade (A1571).....	.....do.....	480	.32	153.60
Scharlach, R., in 10-gm. screw-cap vials.....	120 for 25,000.....	2,400	1.40	3,360.00
Screw drivers (A1575).....	6 for 25,000.....	120	.875	105.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
<b>Scissors:</b>				
Dissecting (Mayo), curved, 5-inch, screw lock (catalogue No. 108).	48 for 25,000. ....	960	\$0.90	\$864.00
Enterotome (Lentz 5630) (A2010).....	3 for 25,000. ....	60	4.00	240.00
Emucleation, full curved, wide blade, screw lock (catalogue No. 576.1).	6 for 25,000. ....	120	1.10	132.00
Fine point (A1574).....	24 for 25,000. ....	48	.62	29.76
Gauze, 9-inch (Lentz 910) (A2007).....	3 for 25,000. ....	60	1.75	105.00
Iris, angular, probe pointed, screw lock (catalogue No. 578).	6 for 25,000. ....	120	1.20	144.00
Iris, full curved, screw lock (catalogue No. 577).	.....do.....	120	1.20	144.00
Nasal (Knight), screw lock (catalogue No. 527).	.....do.....	120	1.50	180.00
Strabismus, straight, screw lock (catalogue No. 579).	.....do.....	120	.85	102.00
Straight blades, blunt, dozens. ....	12 for 25,000. ....	240	2.50	600.00
Straight, 7½-inch, one sharp end, one blunt end (A2005).	6 for 25,000. ....	120	2.50	300.00
Straight point, sharp, 5½-inch, screw lock (catalogue No. 111).	30 for 25,000. ....	600	.85	510.00
Tenotomy (Stevens), straight, screw lock (catalogue No. 580).	6 for 25,000. ....	120	1.25	150.00
Scoop, trochar (Lentz 1166) (A2012).....	12 for 25,000. ....	240	1.50	360.00
Section lifter (A1576).....	6 for 25,000. ....	120	.40	48.00
Shears (A1585).....	24 for 25,000. ....	48	1.08	51.84
Silver foil, in ½-ounce rolls (½-ounce rolls).....	36 for 25,000. ....	720	.67	482.40
Silver, lactate, Merck white label, in 1-ounce c.s.b.	12 for 25,000. ....	240	1.90	456.00
Silver nitrate, blue label, in 1-ounce g.s.b. ....	.....do.....	240	.80	192.00
Slides, 3 by 1 inch, with concavity (A1595).....	30 for 25,000. ....	600	.03	18.00
Slides, micro, 3 by 1 inch (A1590)c.....	300 for 25,000. ....	6,000	.008	48.00
Sodium, acetate, Merck blue label, crystals, in ½-pound g. s. b.	12 for 25,000. ....	240	.20	48.00
Sodalime (sodium), calcium, hydrate, dry, Baker analyzed, in 1-pound c.s.b.	.....do.....	240	.60	144.00
Sodium, carbonate, anhydrous, Merck blue label, 4-ounce c.s.b.	6 for 25,000. ....	120	.19	22.80
Sodium, carbonate, commercial crystals, 1-pound c.s.b.	12 for 25,000. ....	240	.24	57.60
Sodium chloride, Merck blue label, in 1-pound c.s.b.	240 for 25,000. ....	4,800	.23	1,104.00
Sodium, citrate, Merck, highest purity crystals, in 1-pound c.s.b.	12 for 25,000. ....	240	1.30	312.00
Sodium dichromate, commercial, for cleaning mixture, in 1-pound c.s.b.	60 for 25,000. ....	1,200	.45	540.00
Sodium, hydroxide, commercial lumps, in 5-pound cans.	24 for 25,000. ....	480	.65	312.00
Sodium, hydroxide, Merck blue label, purified sticks, ½-pound c.s.b.	240 for 25,000. ....	4,800	.25	1,200.00
Sodium, metallic, Merck white label, in 1-ounce sealed tins.	12 for 25,000. ....	240	.20	48.00
Sodium, nitrate, crystals, Merck blue label, in ½-pound c.s.b.	.....do.....	240	.23	55.20
Sodium, nitrate, sticks, Merck blue label, in ½-pound c.s.b.	.....do.....	240	.23	55.20
Sodium, nitroprusside, Powers Weightman-Rosengarten, in 1-pound c.s.b.	.....do.....	240	.50	120.00
Sodium, oxalate, 100 per cent (Sarensen), Merck blue label, in 1-ounce c.s.b.	.....do.....	240	.20	48.00
Sodium, peroxide, Baker analyzed, C. P., in ½-pound tins.	.....do.....	240	.55	132.00
Sodium phosphate (dihydrogen), Baker analyzed, C. P., in ½-pound c.s.b.	.....do.....	240	.20	48.00
Sodium phosphate (monohydrogen), Baker analyzed, C. P., in ½-pound c.s.b.	24 for 25,000. ....	480	.30	144.00
Sodium potassium tartrate, Merck blue label, in ½-pound c.s.b.	12 for 25,000. ....	240	.83	199.20
Sodium and potassium tartrate, Merck blue label, contains 0.0001 per cent chlorides in 1-pound c.s.b.	.....do.....	240	1.25	300.00
Sodium silicate, lump, Merck white label, in 1-ounce cartons.	.....do.....	240	.07	16.80
Sodium sulphate, anhydrous, Baker analyzed, C. P., in 1-pound c.s.b.	.....do.....	240	.50	120.00
Sodium sulphide, C. P. crystals, Baker analyzed, 1-pound, in g.s.b.	.....do.....	240	.75	180.00
Sodium sulphite, crystals, Merck blue label, in 1-pound c.s.b.	24 for 25,000. ....	480	.20	96.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Sodium, thiosulphate, crystals, Merck blue label, in $\frac{1}{4}$ c.s.b.	12 for 25,000.	240	\$0.15	\$36.00
Sodium, tungstate, Merck blue label, in $\frac{1}{4}$ -pound c.s.b.	.....do.	240	1.25	300.00
Sound, male (Lentz 18, A-2017).	.....do.	240	1.60	384.00
Sound, male (Lentz 5113) No. 24 (A2018).	.....do.	240	1.60	384.00
Spatula and probe (Knapp), catalogue, No. 503.	6 for 25,000.	120	.65	78.00
Spatula, double ended (Fisher), catalogue, No. 501.	.....do.	120	1.52	182.40
Specula, ear (Brown), metal, set of three, catalogue, No. 529.	.....do.	120	.60	72.00
Speculum, nasal, septal (Goldstein), catalogue, No. 511.	24 for 25,000.	480	.50	240.00
Speculum, rectal (Sins), bivalve, wrought metal.	.....do.	5	1.50	7.50
Speculum (Zuzler), catalogue, No. 594.	6 for 25,000.	120	1.90	228.00
Splints, simple, straight (25 each)	2 for 25,000.	90	.224	18.00
Sponges, large, bath (A2016).	12 for 25,000.	240	.03	7.20
Starch, soluble (Merck), white label, in $\frac{1}{4}$ pound c. s. b.	48 for 25,000.	960	.27	259.20
Sterilizer, Arnold steam (A1650).	24 for 25,000.	5	14.95	74.75
Sterilizer, Autoclave, large.	.....do.	5	100.00	500.00
Sterilizers, Autoclave, medium, one.	.....do.	5	60.00	300.00
Sterilizers, Autoclave, small.	.....do.	5	200.00	200.00
Sterilizer, for kerosene (No. 1638).	.....do.	5	33.00	165.00
Sterilizer, hot air, 12 by 18 by 9 inches, specify if gas (A1638).	.....do.	5	33.00	165.00
Sterilizers, hot air, 24 by 30 by 18 inches, gas only (A1644).	30 for 25,000.	6	105.20	631.20
Sternberg, field outfit (A1654).	60 for 25,000.	12	12.50	150.00
Stopcock:				
Brass (A1675).	.....do.	12	.75	9.00
Glass, 1 mm. (A1680).	6 for 25,000.	120	.42	50.40
Glass, 1 mm. (A1681).	.....do.	120	.48	57.60
Stoppers, rubber:				
One hole—				
No. 0, 12 mm. (A1500).	72 for 25,000.	1,440	.0075	10.80
No. 1, 15 mm. (A1501).	.....do.	1,440	.01	14.40
No. 2, 15 mm. (A1502).	.....do.	1,440	.01	14.40
No. 4, 20 mm. (A1503).	.....do.	1,440	.02	28.80
No. 5, 23 mm. (A1504).	.....do.	1,440	.02	28.80
No. 6, 26 mm. (A1505).	144 for 25,000.	2,880	.03	86.40
No. 7, 30 mm. (A1506).	72 for 25,000.	1,440	.04	57.60
No. 8, 33 mm. (A1507).	.....do.	1,440	.04	57.60
No. 9, 36 mm. (A1508).	144 for 25,000.	2,880	.06	172.80
Two hole—				
No. 5, 23 mm. (A1520).	72 for 25,000.	1,440	.02	28.80
No. 6, 26 mm. (A1521).	.....do.	1,440	.03	43.20
No. 7, 30 mm. (A1522).	.....do.	1,440	.04	57.60
Solid—				
No. 00, 10 mm. (A1480).	144 for 25,000.	2,880	.0075	21.60
No. 0, 12 mm. (A1481).	.....do.	2,880	.0075	21.60
No. 1, 15 mm. (A1482).	.....do.	2,880	.01	28.80
No. 2, 15 mm. (A1483).	.....do.	2,880	.01	28.80
No. 4, 20 mm. (A1484).	288 for 25,000.	5,760	.02	115.20
No. 5, 23 mm. (A1485).	144 for 25,000.	2,880	.02	57.60
No. 6, 26 mm. (A1486).	288 for 25,000.	5,760	.03	172.80
No. 7, 30 mm. (A1487).	144 for 25,000.	2,880	.04	115.20
No. 8, 33 mm. (A1488).	.....do.	2,880	.05	144.00
No. 9, 36 mm. (A1489).	.....do.	2,880	.06	172.80
No. 10, 42 mm. (A1490).	.....do.	2,880	.07	201.60
Sudan, 3 in 10 gm., screw cap vials.	120 for 25,000.	2,400	.25	600.00
Supports:				
Burettes, 24-inch (A1690) (one).	1 for 25,000.	20	.50	10.00
Burettes, 36-inch (A1691) (one).	.....do.	20	.80	16.00
With iron base, 10 by 15 cm. rod, 45 cm. by 8 mm.	0.60 for 25,000.	12	1.50	18.00
Syringes:				
Lachrymal, metal, with metal piston, 3 needles of 14-karat gold (catalogue, No. 598) (one).	0.6 for 25,000.	12	1.20	14.40
Luer—				
1 c. c. in 1/100th (A1695).	48 for 25,000.	960	.60	576.00
2 c. c. in 1/10ths (A1696) (one).	120 for 25,000.	2,400	1.13	2,712.00
10 c. c. in 1/5ths (A1697).	.....do.	2,400	1.25	3,000.00
in 1 c. c. (A1698).	24 for 25,000.	480	3.38	1,622.40
Needles for, $\frac{1}{4}$ inch long, 25 B. & S. (A1705).	120 for 25,000.	2,400	.04	96.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Syringes—Continued.				
Luer—Continued.				
Needles for, 1 inch, 22 B. & S. (A1706).....	240 for 25,000.....	4,800	\$0.07	\$336.00
Needles for, 1½ inches long, B. & S. (A1707).....	do.....	4,800	.06	288.00
Needles for, 2 inches long, 18 B. & S. (A1703).....	do.....	4,800	.07	336.00
Needles for, 2 inches long, 20 B. & S. (dozen).....	do.....	4,800	.06	288.00
Needles for, 2½ inches long, 18 B. & S. (A1710).....	do.....	4,800	.07	336.00
Needles for, 3 inches long, B. & S. (A-1712).....	24 for 25,000.....	480	.08	38.40
Needles for, 3 inches long, 18 B. & S. (A-1711).....	do.....	480	.08	38.40
Tags, cardboard (A-1713).....	1,200 for 25,000.....	24,000	.005	120.00
Tambs, tin (A-1721).....	2.4 for 25,000.....	48	.60	28.80
Tape measures, steel, metric, and English meters (A-1725).....	3 for 25,000.....	60	.65	39.00
Tenaculum, all steel, 160 mm. long (A-1730)....	6 for 25,000.....	12	.60	7.20
Test glasses, sediment glasses (A-1735) (one)...	240 for 25,000.....	4,800	.36	1,728.00
Test tubes, 3 in nest.....	120 for 25,000.....	2,400	.025	60.00
Test tubes, heavy wall, without lip, 150 by 16 (A-1746).....	1,200 for 25,000.....	24,000	.02	480.00
Test tubes, heavy wall, for cultures, 210 by 27 mm. (A-1747).....	do.....	24,000	.03	720.00
Test tubes, thin wall, with tip, 100 by 12 mm....	600 for 25,000.....	12,000	.15	1,800.00
Test tubes, thin wall with tip, 120 by 16 mm....	do.....	12,000	.15	1,800.00
Test tubes support (A-1770).....	0.48 for 25,000.....	10	.35	3.50
Test tube support (Wasserman) 10 by 2 inches, 20 perforations (A-1785).....	2.4 for 25,000.....	48	.48	23.04
Thermometers, chemical 100° C. (A-1790).....	6 for 25,000.....	120	.56	67.20
Thermometers, chemical 200° C. (A-1791).....	do.....	120	.70	84.00
Thermometers, chemical, 0 to 350 C. in 1°.....	0.6 for 25,000.....	12	.70	8.40
Thermometers, incubator, visible outside of incubator.....	6 for 25,000.....	120	1.42	170.40
Thermometer, precision 100° (A-1800 certified)...	2 for 25,000.....	40	7.25	290.00
Toluene, Merck white label, in ½-pound c. s. b..	12 for 25,000.....	240	.25	60.00
Toluidin blue, in 10 gm. screw cap vials.....	120 for 25,000.....	2,400	.50	1,200.00
Thionin, in 10 gm. screw cap vials.....	do.....	2,400	.60	1,440.00
Tin (OUS) chloride, Merck blue label, in 1-ounce c. s. b.....	12 for 25,000.....	240	.20	48.00
Tongs, crucible (A-1810).....	2 for 25,000.....	40	.60	24.00
Tongs, soldering, 7 inches.....	8 for 25,000.....	160	.30	48.00
Tongue depressor (Bosworth), steel blade, catalog No. 541.....	6 for 25,000.....	120	.65	78.00
Tongue depressor (Forlow), catalog No. 313.....	12 for 25,000.....	240	.07	16.80
Tourniquets, Esmarch, rubber, 36 by ½ inches, chain guides, catalog, 140.1.....	24 for 25,000.....	480	.38	182.40
Triangles, of chromel, X A alloy, (A-1816).....	6 for 25,000.....	12	.34	4.08
Triangles, chromel, tin (A-1815).....	do.....	120	.27	32.40
Tripod, height 9 inches, diameter 8 inches (A-1825).....	2 for 25,000.....	40	.35	14.00
Tripod iron, diameter 5 by 9 inches (A-1820).....	do.....	40	.15	6.00
Tripod of burners, Tirrill (A-1826).....	6 for 25,000.....	20	.20	2.40
Tube, diagnostic (Townbee, white and black fins, catalog No. 634).....	do.....	120	.35	42.00
Tubes, trachea (Jackson) full curve, German silver, silver-plated, sizes 2, 3, 4, 5, 6, catalog No. 540.....	2.4 for 25,000.....	48	1.10	52.80
Tube, Y. (A-1835).....	60 for 25,000.....	1,200	.04	48.00
Tube, folin (A-183).....	24 for 25,000.....	48	.30	14.40
Tubes, test:				
Medium, thick wall, 75 by 10 mm. (A-1750).....	400 for 25,000.....	8,000	.006	48.00
Medium, thick wall, 100 by 12 mm. (A-1751).....	2,400 for 25,000.....	48,000	.006	288.00
Thin wall with lip (A-1741), 150 by 16 mm....	1,200 for 25,000.....	24,000	.20	4,800.00
Thin wall with lip, 150 by 18 mm.....	600 for 25,000.....	12,000	.20	2,400.00
Thin wall, with lip, 75 by 11 mm. (A-1740)....	2,400 for 25,000.....	48,000	.005	240.00
Tubing rubber:				
Acid cured, thick wall, 5 mm. 1½ (A-1535)....	60 for 25,000.....	1,200	.14	168.00
(A-1529), feet.....	12 for 25,000.....	240	.10	24.00
Clath wrapped, 6 mm. bore.....	60 for 25,000.....	12	.15	1.80
For cylinder (A-5).....	120 for 25,000.....	2,400	.15	360.00
For gas and water connections ½ by ½ inch (A-1530).....	do.....	2,400	.10	240.00
For Gooch crucibles (A-1555), feet.....	60 for 25,000.....	1,200	.23	276.00
Pressure ½ by ½ (A-1545), feet.....	do.....	1,200	.32	384.00
Thick wall, black, ½ by ½ inch (A-1540), feet.....	do.....	1,200	.18	216.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—LABORATORY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Tuning fork, Hartman's. with clamp 6½ inches (catalog No. 547) (one).	0.6 for 25,000.....	12	\$0.12	\$24.00
Tuxmeric. paper, Mallinckrvelt's. 100 strips in s. c. vial.	12 for 25,000.....	240	.05	12.00
Uranium acetate, free from sodium, Merck blue label. in 1-ounce c. s. b., bottles.	.....do.....	240	1.10	264.00
Uranium nitrate, Merck blue label. in 1-ounce c. s. b., bottles	.....do.....	240	.75	180.00
Urea apparatus. complete (A-1840).....	1.44 for 25,000.....	29	13.20	382.80
Urea, Merck blue label. P. H. O. V. in 1-ounce c. s. b., bottles.	12 for 25,000.....	240	.25	60.00
Urease tablets, Squibb, 100 by ⅛ grain. tablets in vials.	.....do.....	240	1.00	240.00
Ureometer (A-1845) (one).....	3 for 25,000.....	60	1.50	90.00
Urinometer (A-1850).....	180 for 25,000.....	3,600	.45	1,620.00
Vials, shell, for mailing case (A-1855).....	2,400 for 25,000.....	48,000	.01	480.00
Wash, bottle (A-1865) (one).....	12 for 25,000.....	240	.47	112.80
Wassermann bath (A-1870) (one).....	24 for 25,000.....	5	165.00	825.00
Watch, glasses, 30 mm. (A-1875) (one).....	60 for 25,000.....	1,200	.02	24.00
Water, bath:				
Inoculating (A-1885) (one).....	0.24 for 25,000.....	5	2.00	10.00
Perforated, insert for (A-1895) (one).....	1 for 25,000.....	20	.80	16.00
With concentric rings for inflammable liquids (A-1890).	.....do.....	20	11.50	230.00
With concentric rings, stopcock water level. regulator fitted with steam coil (A-1900).	24 for 25,000.....	5	16.85	84.25
Watch glasses, 65 mm. (A-1876) (one).....	60 for 25,000.....	1,200	.02	24.00
Watch glasses, 100 mm. (A-1877) (one).....	.....do.....	1,200	.03	36.00
Wicks, for alcohol stove (A-291).....	12 for 25,000.....	240	.0375	9.00
Wire aluminum, 20 gauge (A-1915), feet.....	24 for 25,000.....	480	.10	48.00
Wire, copper:				
16-gauge (A-1920).....	120 for 25,000.....	2,400	.15	360.00
18-gauge (A-1921).....	.....do.....	2,400	.25	600.00
20-gauge.....	60 for 25,000.....	1,200	.15	180.00
22-gauge (A-1923).....	.....do.....	1,200	.15	180.00
Wire, nichrome:				
20-gauge.....	240 for 25,000.....	4,800	.05	240.00
24-gauge (A-1925).....	72 for 25,000.....	1,440	.05	72.00
26-gauge (A-1926).....	.....do.....	1,440	.05	72.00
Wire gauge, nickel, chromium, 5 squares (A-1945).	24 for 25,000.....	480	.03	14.40
Wire, nichrome ribbon (A-1935).....	12 for 25,000.....	240	.05	12.00
Wire, platinum:				
24-gauge (A-1940), feet.....	.....do.....	240	{ gm. 3.67 fr. 2.76 }	662.40
26 gauge (A-1941).....	.....do.....	240	{ gm. 3.67 fr. 4.25 }	1,020.00
Wright stain, powdered in 2 gm. ampoules.....	240 for 25,000.....	4,800	.18	864.00
Xylol, water white, crystallizable in 1-pound; c. s. b.	48 for 25,000.....	960	.22	211.20
Zinc:				
Carbonate, Baker analyzed, C. P., in ½ pound, c. s. b.	12 for 25,000.....	240	.15	36.00
Metal, arsenic free, Baker special, in ½-pound cartons.	.....do.....	240	.30	72.00
Metallic, Mossy, for gas generators, in 1-pound cartons.	.....do.....	240	.22	52.80
Sulphate, pure crystals in ½-pound bottles..	.....do.....	240	.20	48.00
Total.....				265,282.77

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Item name: Lye, concentrated, 1 pound, in can.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	3,600 for 25,000 . . . . .	72, 000
Total requirements . . . . .			72, 000

Cost Basis:	
\$0.0733 per lb. Net requirements . . . . .	72, 000
in 13-lb. cans. Total cost of net requirements . . . . .	\$5, 277.60

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimate based on experience.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Levels, Engineers' dumpy.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	0.026 per 1,000 men per year . . . . .	13
Total requirements . . . . .			13

Cost Basis:	Net requirements . . . . .	13
\$145.	Total cost of net requirements . . . . .	\$1,885

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 64 levels, as initial equipment, for Engr. Tr. of 500,000 men.  
Estimated life of equipment, 5 years.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Marching compasses.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	9.48 per 1,000 men per year . . . . .	4,740
Total requirements . . . . .			4,740
Cost BASIS: Net requirements . . . . .			4,740
\$11.89. Total cost of net requirements . . . . .			\$56,358.60

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Authority: Issue of tables, Chief of Engineers.  
 Basis: 23,699 marching compasses, as initial equipment for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Procured in the past by office of Chief Signal Officer. *Item name:* Megaphones.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	13.41 per div. per year.	322
Cost BASIS: Net requirements . . . . .			322
\$3 each. Total cost of net requirements . . . . .			\$966

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 37.25 megaphones issued per division.  
 13.41 maintenance per division per year. Wastage for U. S. training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
 Unit price of latest order.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Mess equipment.

Total cost of net requirements..... \$97,790.52

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

See detailed sheets attached, or Appendix No. 5.

## QUARTERMASTER CORPS.

## GENERAL SUPPLIES.

(Estimate computed on strength of 500,000 men.)

## MESS EQUIPMENT.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Egg beaters.....	50 for 25,000.....	1,000	\$0.21	\$210.00
Boilers, coffee, 11½ quart (1).....	30 for 25,000.....	600	1.17	702.00
Boilers, double, for cooking, 4 quarts.....	30 for 25,000.....	600	1.20	720.00
Boilers, tin, copper bottom.....	60 for 25,000.....	1,200	2.68	3,316.00
Bowls, chopping.....	12 for 25,000.....	240	.75	180.00
Bowls, soup, enamel ware or aluminum (1).....	720 for 25,000.....	14,400	1.16	2,304.00
Bowls, sugar, enamel ware (1).....	24 for 25,000.....	480	.38	182.40
Brushes, scrubbing.....	430.632 per 1,000 men per year.....	215,316	.12	25,837.92
Buckets, covered, metal, 7-quart.....	72 for 25,000.....	14,400	.60	8,640.00
Cleavers (each).....	10.944 per 1,000 men per year.....	5,472	1.413	7,731.94
Cleavers.....	4 for 25,000.....	80	1.41	112.80
Colander, hotel size.....	12 for 25,000.....	240	.90	216.00
Cups, enamel ware.....	1,200 for 25,000.....	24,000	.20	4,800.00
Cruets, vinegar and oil.....	120 for 25,000.....	2,400	.16	384.00
Dippers.....	96 for 25,000.....	1,920	.34	652.80
Dishes, meat, enamel ware.....	96 for 25,000.....	1,920	.47	902.40
Dishes, vegetable, enamel ware.....	96 for 25,000.....	1,920	.18	345.60
Forks, carving.....	36 for 25,000.....	720	.55	396.00
Forks, flesh.....	48 for 25,000.....	960	.70	672.00
Forks, meat, large.....	10.944 per 1,000 men per year.....	5,472	.40	2,188.80
Forks, silver plated or steel, table.....	1,200 for 25,000.....	24,000	.13	3,120.00
Graters, large.....	120 for 25,000.....	2,400	.15	360.00
Griddles.....	24 for 25,000.....	480	.58	278.40
Grindstone, kitchen, complete.....	1.8 for 25,000.....	36	9.75	351.00
Gridirons, large.....	2.5 for 25,000.....	50	.95	47.50
Kettles, tea.....	24 for 25,000.....	480	.58	278.40
Knife, bread.....	48 for 25,000.....	960	.32	307.20
Knives, butcher.....	48 for 25,000.....	960	.30	288.00
Knives, carving.....	48 for 25,000.....	960	.81	777.60
Knives, table, silver plated or steel.....	1,200 for 25,000.....	24,000	.19	4,560.00
Potato masher, hotel size.....	24 for 25,000.....	48	.42	20.16
Meat cutters, hotel size.....	1 for 25,000.....	20	3.75	75.00
Pans, dish, extra heavy retinned or metal, 30-quart.....	24 for 25,000.....	480	1.31	628.80
Pans, frying, large.....	24 for 25,000.....	480	2.50	1,200.00
Pans, frying, medium size.....	24 for 25,000.....	480	.62	297.60
Pans, muffin.....	48 for 25,000.....	960	.31	297.60
Pans, sauce, 4-quart.....	72 for 25,000.....	1,440	.38	547.20
Pans, sauce, 12-quart.....	48 for 25,000.....	960	.83	796.80
Pitchers, enamel ware, 1-pint.....	120 for 25,000.....	2,400	.43	1,032.00
Pitchers, enamel ware, 4-quart.....	72 for 25,000.....	1,440	.90	1,296.00
Plates, dinner, enamel ware.....	1,200 for 25,000.....	24,000	.20	4,800.00
Pots, tea, enamel ware.....	36 for 25,000.....	720	.40	288.00
Rolling pins, hotel size (1).....	2 for 25,000.....	40	.21	8.40
Saucers, enamel ware.....	1,200 for 25,000.....	24,000	.13	3,120.00

¹ Each.

## QUARTERMASTER CORPS—Continued.

## GENERAL SUPPLIES—continued.

## MESS EQUIPMENT—Continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Saws, butcher's, large.....	2.4 for 25,000.....	48	\$0.80	\$38.40
Shakers, pepper, glass.....	120 for 25,000.....	2,400	.13	312.00
Shakers, salt, glass.....	120 for 25,000.....	2,400	.13	312.00
Sieves, flour, pan type, hotel size....	12 for 25,000.....	240	.95	228.00
Skimmers (1).....	60 for 25,000.....	1,200	.30	360.00
Slicer, bread and meat, sterling No. 70 (1).	.24 for 25,000.....	5	25.00	125.00
Spoons, basting, tinned iron (1).....	60 for 25,000.....	1,200	.11	132.00
Spoons, basting, tinned iron, large..	36 for 25,000.....	720	.11	79.20
Spoons, table, silver plated or metal (1).	1,200 for 25,000.....	24,000	.13	3,120.00
Spoons, tea, silver plated or metal...	12,000 for 25,000.....	240,000	.03	7,200.00
Steels (1).....	4.8 for 25,000.....	96	.35	33.60
Tumblers, glass.....	120 for 25,000.....	2,400	.075	180.00
Whips, egg.....	50 for 25,000.....	1,000	.50	500.00
				97,790.52

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION.

Appropriation: *Item name:* Medicines, antiseptics, and disinfectants.

Total cost of net requirements. . . . . \$2,007,871.44

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

See detailed sheets attached or Appendix No. 16.

## QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION—MEDICINES, ANTISEPTICS, AND DISINFECTANTS.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Acacia powder, 1 pound, in bottle.....	100 for 25,000.....	3,600	80.43	\$1,548.00
Acidum aceticum, $\frac{1}{2}$ pound, in bottle.....	96 for 25,000.....	1,920	.25	480.00
Acidum acetyl salicylicum, 324 mgm., 500 tablets in bottle.....	2,400 for 25,000.....	48,000	.90	43,200.00
Acidum acetyl salicylicum, 1 pound, in carton....	240 for 25,000.....	4,800	1.95	8,880.00
Acidum boricum, powder, $\frac{1}{2}$ pound, in bottle.....	1,920 for 25,000.....	38,400	.185	7,104.00
Acidum hydrochloricum, $\frac{1}{2}$ pound, in bottle.....	420 for 25,000.....	8,400	.23	1,932.00
Acidum nitricum, $\frac{1}{2}$ pound, in bottle.....	300 for 25,000.....	6,000	.27	1,620.00
Acidum salicylicum, 3 ounces, in bottle.....	.....do.....	6,000	.35	2,100.00
Acidum sulphuricum, $\frac{1}{2}$ pound, in bottle.....	276 for 25,000.....	5,520	.20	1,104.00
Acidum tannicum, powder, 3 ounces, in bottle....	216 for 25,000.....	4,320	.27	1,166.40
Acidum tartaricum, $\frac{1}{2}$ pound, in bottle.....	120 for 25,000.....	2,400	.47	1,128.00
Adrenalin chloride, 1 mgm., 20 in tube.....	2,400 for 25,000.....	48,000	.60	28,800.00
Aether, $\frac{1}{2}$ pound, in tin.....	42,000 for 25,000.....	840,000	.15	109,200.00
Aethylis chloridum, 3 ounces, in metal tube.....	300 for 25,000.....	6,000	.77	4,620.00
Alcohol:				
3 pints, in tin.....	720 for 25,000.....	14,400	.45	6,480.00
Do.....	5,000 for 25,000.....	100,000	.35	35,000.00
3 gallons, in tin.....	2,472 for 25,000.....	49,440	5.25	259,560.00
Do.....	240 for 25,000.....	4,800	5.25	25,200.00
Denatured, 2 quarts, in tin.....	8,400 for 25,000.....	168,000	.40	67,200.00
Alumen powder, $\frac{1}{2}$ pound, in bottle.....	180 for 25,000.....	3,600	.18	648.00
Ammonia carbonas, lumps, $\frac{1}{2}$ pound, in bottles....	240 for 25,000.....	4,800	.18	864.00
Ammonia chloridum, $\frac{1}{2}$ pound, in bottle.....	750 for 25,000.....	15,000	.15	2,250.00
Antiformin, in pound c. s. b.....	36 for 25,000.....	720	.36	259.00
Apomorphinae, hydrochloridum, 6 mgm. hypo tablets, 20 in tube.....	700 for 25,000.....	14,000	.20	2,800.00
Aqua ammonia, 10 per cent, 1 pound, in bottle....	900 for 25,000.....	18,000	.20	4,500.00
Aqua, hydrogenii, dioxide, 1 pound, bottles.....	1,200 for 25,000.....	24,000	.12	2,880.00
Argenti nitras, crystals, 1 ounce, in bottles.....	840 for 25,000.....	16,800	.68	11,424.00
Argyrol or equivalent, 1 ounce, in bottle.....	756 for 25,000.....	15,120	.43	6,501.60
Atrophiæ, sulphas $\frac{1}{2}$ ounce, in bottle.....	60 for 25,000.....	1,200	4.00	4,800.00
Atropinae sulphas, 0.65 mgm. hypo. tablets, 20 in tube.....	18,000 for 25,000.....	36,000	.045	1,620.00
Barbital, 324 mgm. tablets, 100 in bottle.....	300 for 25,000.....	6,000	2.45	14,700.00
Bismuthi subcarbonas, U. S. P., 1 pound, in carton	60 for 25,000.....	1,200	3.20	3,840.00
Caffeina citrata:				
65 mgm. tablets, 20 in tube.....	240 for 25,000.....	4,800	.04	192.00
1 ounce, in bottle.....	.....do.....	4,800	.44	2,112.00
Camphora, powder, $\frac{1}{2}$ pound, in bottle.....	200 for 25,000.....	4,800	.52	2,080.00
Capsules, gelatine, 100 in box, size 2.....	6,000 for 25,000.....	120,000	.07 $\frac{1}{2}$	8,700.00
Chloralum hydratum, 324 mgm. tablets, 400 in bottle.....	156 for 25,000.....	3,120	.41	1,279.20
Chloralum hydratum, 1 ounce, in bottle.....	240 for 25,000.....	4,800	.12	576.00
Chloroform, $\frac{1}{2}$ pound, in tin.....	18,000 for 25,000.....	360,000	.25	90,000.00
Crysarobinum, $\frac{1}{2}$ ounce, in bottle.....	24 for 25,000.....	480	.22	105.60
Scainae, hydrochloridum, 10 mgm. hypo. tablets, 20 tablets in tube.....	7,200 for 25,000.....	144,000	.11	15,840.00
Scainae, hydrochloridum, $\frac{1}{2}$ ounce, in bottle....	1,800 for 25,000.....	36,000	2.40	86,400.00
Phenidia, 32 mgm. tablets; 600 in bottle.....	600 for 25,000.....	12,000	7.25	87,000.00
Phenidia sulphas, 1 ounce, in bottle.....	288 for 25,000.....	5,760	7.27	41,875.20

## QUARTERMASTER CORPS—Continued.

MEDICAL AND HOSPITAL SUPPLIES DIVISION—MEDICINES, ANTISEPTICS, AND DISINFECTANTS—Continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Collodium, 1 ounce, in bottle.....	2,000 for 25,000.....	\$40,000	.06	\$2,400.00
Creasotum, 1 ounce, in bottle.....	192 for 25,000.....	3,840	.15	576.00
Cupri sulphas, 1 ounce, in bottle.....	144 for 25,000.....	2,880	.053	152.64
Emetinae hydrochloridum, 32 mgm. hypo. tablets, 20 in tube.	132 for 25,000.....	2,640	.44	1,161.60
Emplastrum sinapis, 4 yards by 6 inches, tin.....	240 for 25,000.....	4,800	.62	2,976.00
Eucalyptol, 1 ounce, in bottle.....	120 for 25,000.....	2,400	.15	360.00
Extractum bella donnae foliorum, 1 ounce, in bottle.	60 for 25,000.....	1,200	.35	420.00
Extractum, glycyrrhizae purum, $\frac{1}{2}$ pound, in jar..	1,080 for 25,000.....	21,600	.15	3,240.00
Ferri phosphas solubilis, 1 pound, in bottle.....	360 for 25,000.....	7,200	1.05	7,560.00
Foot powder (par. 902), $\frac{1}{2}$ pound, in tin.....	12,000 for 25,000.....	240,000	.04 $\frac{1}{2}$	10,800.00
Fluidextractum, ipecacuanulae, $\frac{1}{2}$ pound, in bottle.	36 for 25,000.....	720	2.45	1,758.00
Glycerinum, 1 pound, in bottle.....	900 for 25,000.....	18,000	.75	13,500.00
Hexamethylenamina, N. S. P., 1 ounce, in bottle..	1,000 for 25,000.....	20,000	.10	2,000.00
Homatropianae hydrobromidum, 15 grains, in bottle.	120 for 25,000.....	2,400	3.75	9,000.00
Hydrargyri chloridum, corrosivum (antiseptic) (par. 902), 250 in bottle.	2,000 for 25,000.....	40,000	.80	32,000.00
Hydrargyri, chloridum, corrosivum, 3 ounces, in bottle.	100 for 25,000.....	2,000	.34	680.00
Hydrargyri, chloridum, corrosivum, U. S. P., 1 pound, in bottle.	300 for 25,000.....	6,000	1.85	11,100.00
Hydrargyri, chloridum, mite, 65-mgm. tablets, 250 in bottle.	120 for 25,000.....	2,400	.07	168.00
Hydrargyri, chloridum, mite, U. S. P., 2 ounces, in bottle.	360 for 25,000.....	7,200	.23	1,656.00
Hydrargyri, iodum, flavium, 10-mgm. tablets, 250 in bottle.	600 for 25,000.....	12,000	.09	1,080.00
Hydrargyri, salicylas, 1 ounce, in bottle.....	300 for 25,000.....	4,000	.22	880.00
Ichthyolum (or equivalent), 3 ounces, in bottle..	600 for 25,000.....	12,000	.37	4,440.00
Iodium potassium iodidum, in tube.....	120,000 for 25,000.....	2,400,000	.05	120,000.00
Liquor formaldehydi:				
37 $\frac{1}{2}$ per cent, 1 quart, in bottle.....	1,008 for 25,000.....	20,160	.49	9,878.40
37 $\frac{1}{2}$ per cent, 5 gallons, in tin.....	288 for 25,000.....	5,700	8.50	48,450.00
Liquor, potassii, arsenitis, $\frac{1}{2}$ pound, in bottle.....	100 for 25,000.....	2,000	.10	200.00
Methol, 1 ounce, in bottle.....	156 for 25,000.....	3,120	.26	811.20
Methylis salicylas (oil wintergreen, synthetic), 1 ounce, in bottle.	420 for 25,000.....	8,400	.11	924.00
Mistura glycyrrhizal comp. tablets (par. 902), 3,600 in bottle.	1,440 for 25,000.....	28,800	1.29	30,067.20
Mormal saline solution, tablets (par. 902), 150 in bottle.	1,200 for 25,000.....	24,000	.115	2,760.00
Morphinae sulphas powder, $\frac{1}{2}$ ounce, in bottle....	600 for 25,000.....	12,000	2.60	31,200.00
Morphinae sulphas, 8-mgm. hypo. tablets, 20 in tube.	12,000 for 25,000.....	240,000	.10	24,000.00
Nitroglycerin, 0.65 mgm. hypo. tablets, 20 in tube.	660 for 25,000.....	13,200	.03	396.00
Oleoresina ospidii, 1 ounce, in bottle.....	36 for 25,000.....	720	.95	684.00
Oleum aurantii carticis, 1 ounce, in bottle.....	216 for 25,000.....	4,320	.22	950.40
Oleum caryophylli, 1 ounce, in bottle.....	240 for 25,000.....	4,800	.35	1,680.00
Oleum gossypii seminis, 1 quart, in bottle.....	720 for 25,000.....	14,400	.54	7,776.00
Oleum menthae piperitae, 1 ounce, in bottle.....	300 for 25,000.....	6,000	.27	1,620.00
Oleum ricini, 1 quart, in bottle.....	60,000 for 25,000.....	60,000	.95	57,000.00
Oleum, terebinthinae rectification, 1 quart in bottle.	300 for 25,000.....	6,000	.50	3,000.00
Oleum, terebinthinae rectification, 3 pints in tin.	360 for 25,000.....	7,200	.43	3,096.00
Pepsinum, 3 ounces in bottle.....	36 for 25,000.....	720	.50	360.00
Peptonizing tablets (par. 902), 125 in bottle.....	24 for 25,000.....	480	.15	72.00
Petrolatum, 12 ounces, in tin.....	396 for 25,000.....	7,920	.14	1,108.80
Petrolatum, 3 pounds in tin.....	1,250 for 25,000.....	25,000	.40	10,000.00
Petrolatum, 40 pounds in tin.....	48 for 25,000.....	960	4.00	3,840.00
Petrolatum liquidum, 1 pound in bottle.....	540 for 25,000.....	10,800	.33 $\frac{1}{2}$	3,600.00
Petrolatum liquidum, 5 gallons in tin.....	48 for 25,000.....	960	8.55	8,208.00
Phenol, $\frac{1}{2}$ pound in bottles.....	3,850 for 25,000.....	77,000	.30	23,100.00
Phenol, 1 gallon in can or equivalent.....	48 for 25,000.....	960	3.50	3,360.00
Phenylis salicylas, U. S. P., $\frac{1}{2}$ pound in carton....	36 for 25,000.....	720	.77	554.40
Phenylis salicylas, 324-mgm. tablets, 500 in bottle.	420 for 25,000.....	8,400	.73	6,132.00
Phyostygminae sulphas, 0.0325 mgm. ophthalmic disks, 50 in tube.	36 for 25,000.....	720	.12	86.40
Pilulae aloini composite (or tablets) (par. 902), 500 in bottle.	432 for 25,000.....	8,640	.22	1,900.80
Pilulae cartharticae, composite or tablets, 400 in bottle.	300 for 25,000.....	6,000	.43	2,580.00
Pilulae carthartecae, composite or tablets, 1,200 in tin.	100 for 25,000.....	2,000	1.00	2,000.00
Plumbi acetas, 6 ounces in bottle.....	1,200 for 25,000.....	24,000	.17	4,080.00
Plumbi acetas, 130-mgm. tablets, 500 in bottle....	72 for 25,000.....	1,440	.15	216.00
Potassii, hydroxidum, 1 ounce in bottle.....	252 for 25,000.....	5,040	.25	1,260.00

<sup>1</sup> Per bottle of 1,000.

## QUARTERMASTER CORPS—Continued.

MEDICAL AND HOSPITAL SUPPLIES DIVISION—MEDICINES, ANTISEPTICS, AND DISINFECTANTS—continued.

Name of item.	Working basis.	Require- ments.	Cost basis.	Total cost.
Potassii, iodidum, $\frac{1}{2}$ pound in bottle.....	480 for 25,000.....	9,600	\$1.80	\$17,280.00
Potassii, iodidum, 324-mgm. tablets, 500 in bottle.....	.....do.....	9,600	1.42	13,632.00
Protargol, or equivalent, 1 ounce in bottle.....	7,200 for 25,000.....	144,000	.45	64,800.00
Pulvis, ipecacuanhae, et opii, 324-mgm. tablets, 500 in bottle.....	480 for 25,000.....	9,600	1.15	11,040.00
Pulvis, ipecacuanhae, et opii, $\frac{1}{2}$ pound in bottle.....	156 for 25,000.....	3,120	.90	2,808.00
Quininae hydrochlorosulphas, 32-mgm. hypo. tablets, 20 in tube.....	660 for 25,000.....	13,200	.07	924.00
Quininae sulphas, 200-mgm. tablets, 500 in bottle.....	420 for 25,000.....	8,400	1 6.80	28,560.00
Quininae sulphas, crystals, 1 ounce in bottle.....	.....do.....	8,400	.98	8,232.00
Santonium, 32-mgm. tablets, 250 in bottle.....	36 for 25,000.....	720	.52	374.40
Sapo mollis, 1 pound in jar.....	600 for 25,000.....	12,000	.27	3,240.00
Sapo mollis (green soap):				
1 pound in jar.....	3,000 for 25,000.....	60,000	.27	16,200.00
50 pounds in tin.....	48 for 25,000.....	960	8.50	8,160.00
Sodii acetat, U. S. P., 1 pound in bottle.....	1,200 for 25,000.....	24,000	.34	8,160.00
Sodii borat powder:				
1 pound in bottle.....	360 for 25,000.....	7,200	.115	828.00
Commercial, 100 pounds in cartons or equivalent.....	48 for 25,000.....	960	7.80	7,200.00
Sodii bromidum:				
6 ounces, in bottle.....	400 for 25,000.....	8,000	.26	2,080.00
U. S. P., 324-mgm. tablets, 500 in bottle.....	480 for 25,000.....	9,600	.33	3,168.00
Sodii carbonas, monohydratus, for surgical use, 1 pound in bottle.....	1,440 for 25,000.....	28,800	.18	5,184.00
Sodii, salicylas:				
324-mgm. tablets, 500 in bottle.....	1,200 for 25,000.....	24,000	.47	11,280.00
6 ounces in bottle.....	300 for 25,000.....	6,000	.45	2,700.00
Sodium bicarbonas, 324-mgm. tablets, 500 in bottle.....	600 for 25,000.....	12,000	.12	1,440.00
Spiritus, ammoniac, aromaticus, $\frac{1}{2}$ pound in bottle.....	6,900 for 25,000.....	138,000	.46	63,480.00
Spiritus frumenti, 1 quart in bottle.....	1,200 for 25,000.....	24,000	1.00	24,000.00
Strophanthinum, 0.5-mgm. hypodermic tablets, 20 in tube.....	2,400 for 25,000.....	48,000	.08	3,840.00
Strychninae sulphas, 1-mg. hypo. tablets:				
20 in tube.....	.....do.....	480,000	.07	33,600.00
250 in bottle.....	1,200 for 25,000.....	24,000	.085	2,040.00
Sulphur, in roll.....	.....do.....	24,000	.038	912.00
Sulphur lotum, $\frac{1}{2}$ pound in bottle.....	350.....	7,000	.15	1,050.00
Takum, 2 pounds in tin.....	600 for 25,000.....	12,000	.20	2,400.00
Thymol, 1 ounce in bottle.....	2,500 for 25,000.....	50,000	1.00	50,000.00
Tinctura, aconiti, 1 ounce in bottle.....	100 for 25,000.....	2,000	.08	160.00
Tinctura benzoini composita, $\frac{1}{2}$ pound in bottle.....	180 for 25,000.....	3,600	.50	1,800.00
Tinctura, digitalis:				
O. c. c. tablets, 500 in bottle.....	240 for 25,000.....	4,800	.15	720.00
$\frac{1}{2}$ pound in bottle.....	120 for 25,000.....	2,400	.35	840.00
Tinctura, nucis, vomicae, $\frac{1}{2}$ pound in bottle.....	.....do.....	2,400	.32	768.00
Tinctura opii, $\frac{1}{2}$ pound in bottle.....	100 for 25,000.....	2,000	1.50	3,000.00
Trochis ammoniac chloride, 125 in bottle.....	720 for 25,000.....	14,400	.12	1,728.00
Unguentum hydrargyri, $\frac{1}{2}$ pound in bottle.....	780 for 25,000.....	15,600	.68	10,608.00
Unguentum hydrargyri chloride mitis:				
30 per cent calomel, $\frac{1}{2}$ pound in bottle.....	620 for 25,000.....	12,400	.60	7,440.00
30 per cent, 2 pounds in jar.....	1,200 for 25,000.....	24,000	2.13	51,120.00
Unguentum hydrargyri oxidii flavi, 2 per cent, $\frac{1}{2}$ ounce in tube.....	2,600 for 25,000.....	72,000	.03	2,160.00
Zinc oxidum, $\frac{1}{2}$ pound in bottle.....	360 for 25,000.....	7,200	.15	1,080.00
Iodum, 1 ounce in bottle.....	625 for 25,000.....	12,500	.32	4,000.00
Total.....				2,007,871.44

<sup>1</sup> Per bottle of 1,000.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION.

Appropriation: Item name: Miscellaneous hospital supplies.

Total cost of net requirements. \$398, 933. 13

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

See detailed sheets attached or Appendix No. 17.

QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION.—MISCELLANEOUS HOSPITAL SUPPLIES.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require-ments.	Cost basis.	Total cost.
Apparatus, electric, extra batteries for . . . . .	2.4 for 25,000 . . . . .	48	\$2. 50	\$120. 00
Applicators for throat, metal . . . . .	12 for 25,000 . . . . .	240	. 10	24. 00
Aprons, rubber . . . . .	7.2 for 25,000 . . . . .	144	. 58	83. 52
Bags, rubber:				
Hot water . . . . .	750 for 25,000 . . . . .	15,000	. 67	10,050. 00
Hot water and syringe . . . . .	72 for 25,000 . . . . .	1,440	. 96	1,382. 40
Ice, for head . . . . .	240 for 25,000 . . . . .	4,800	. 52	2,496. 00
Bandages, winders . . . . .	0.24 for 25,000 . . . . .	5	1. 35	6. 75
Boiler, coffee, 40-gallon, aluminum or re- tinned copper, with faucet, strainer, wire ring inside for French drip, and metal tray to protect bottom of boiler.	0.24 for 25,000 . . . . .	5	53. 15	265. 75
Boilers, instruments . . . . .	36 for 25,000 . . . . .	720	7. 65	5,508. 00
Bottles, 4-quart, for antiseptic solution . . . . .	72 for 25,000 . . . . .	1,440	. 75	1,080. 00
Boxes:				
Ointment, impervious, 4-ounce . . . . .	3,600 for 25,000 . . . . .	72,000	. 019	1,368. 00
Ointment, impervious, nesting, 3 in nest, 1/4, 1, and 2-ounce nests.	3,600 for 25,000 . . . . .	72,000	. 016	1,152. 00
Ointment, tin, 2-ounce . . . . .	1,200 for 25,000 . . . . .	24,000	. 0156	374. 40
Powder, nesting, 3 sizes in nest . . . . .	14,400 for 25,000 . . . . .	288,000	. 0155	4,464. 00
Can openers . . . . .	120 for 25,000 . . . . .	2,400	. 04	96. 00
Capsules, gelatine:				
100 in box, size 00 . . . . .	1,200 for 25,000 . . . . .	24,000	. 09	2,160. 00
100 in box, size 0 . . . . .	do . . . . .		. 08	1,920. 00
100 in box, size 1 . . . . .	6,000 for 25,000 . . . . .	120,000	. 075	9,000. 00
Chamois skins . . . . .	72 for 25,000 . . . . .	1,440	. 65	936. 00
Corks:				
Assorted, 300 in bag, bags . . . . .	240 for 25,000 . . . . .	4,800	. 60	2,880. 00
No. 2, 150 in bag . . . . .	60 for 25,000 . . . . .	1,200	. 21	252. 00
Long taper-				
Size 2, dozen . . . . .	4,800 for 25,000 . . . . .	96,000	. 02	1,920. 00
Size 3, dozen . . . . .	do . . . . .	96,000	. 02	1,920. 00
Size 4, dozen . . . . .	3,600 for 25,000 . . . . .	72,000	. 02	1,440. 00
Size 5, dozen . . . . .	2,400 for 25,000 . . . . .	48,000	. 01932	927. 36
Size 10, dozen . . . . .	260 for 25,000 . . . . .	7,200	. 06	432. 00
Cots, iron, folding . . . . .	100 for 25,000 . . . . .	2,000	3. 75	7,500. 00
Crutches, pairs . . . . .	240 for 25,000 . . . . .	4,800	. 36	1,728. 00
Crutches, rubber tips for, Nos. 18 and 19 . . . . .	2,400 for 25,000 . . . . .	48,000	. 034	1,600. 00
Cups, spit:				
Paper . . . . .	360,000 for 25,000 . . . . .	7,200,000	. 005	36,000. 00
Paper, metal frame for (number) . . . . .	1,000 for 25,000 . . . . .	20,000	. 06	1,200. 00
White enamel . . . . .	120 for 25,000 . . . . .	2,400	. 31	744. 00
Cushions:				
Rubber, open center . . . . .	do . . . . .	2,400	1. 10	2,640. 00
Surgical, Kelly's . . . . .	12 for 25,000 . . . . .	240	3. 25	780. 00
Cuspidors . . . . .	50 for 25,000 . . . . .	1,000	. 60	600. 00
Eye shades:				
Double . . . . .	480 for 25,000 . . . . .	9,600	. 042	403. 20
Single . . . . .	360 for 25,000 . . . . .	7,200	. 027	194. 40
Flasks, empty (par. 864) . . . . .	48 for 25,000 . . . . .	960	. 11	105. 60
Gloves, rubber . . . . .	3,600 for 25,000 . . . . .	72,000	. 30	21,600. 00
Gloves, rubber, patching outfits for . . . . .	2 for 25,000 . . . . .	40	. 10	4. 00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—MISCELLANEOUS HOSPITAL SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Graduates, glass:				
10 c. c.	48 for 25,000	960	\$0.19	\$182.40
250 c. c.	60 for 25,000	1,200	.23	276.00
300 c. c.	48 for 25,000	960	.40	384.00
1,000 c. c.	12 for 25,000	240	.70	168.00
Jars:				
Large, enamel, for dressings	2.4 for 25,000	48	.98	47.04
Small, enamel ware, covered, for sutures	do.	48	.54	25.92
Kettles, croup	12 for 25,000	240	1.50	360.00
Labels:				
For dispensing set	0.24 for 25,000	5	.19	.95
Poison, assorted, gross	120 for 25,000	2,400	1.01	36.00
Spirit, glass or metal, wicks for one	48 for 25,000	960	.012	11.52
Lanterns, extra gloves for, white	120 for 25,000	2,400	.079	189.60
Mats, door, metal, folding	1 for 25,000	20	1.10	22.00
Medicine droppers, dozen	800 for 25,000	16,000	.108	1,728.00
Medicine glasses	1,200 for 25,000	24,000	.025	600.00
Mirrors, head, in case (par. 933)	1 for 25,000	20	1.40	28.00
Needles, common, assorted	240 for 25,000	4,800	.058	278.40
Needles, sailmaker's	2 for 25,000	40	.045	1.80
Cloth for tables, etc., yards	1,200 for 25,000	24,000	.41	9,840.00
Pads, prescription	do.	24,000	.40	9,600.00
Pails:				
Commode (closed stools)	60 for 25,000	1,200	2.35	2,820.00
White enamel nesting	do.	1,200	.95	1,140.00
Pins, common, assorted	3,600 for 25,000	72,000	.53	38,160.00
Punches, perforating, metal	12 for 25,000	240	1.02	244.80
Pus basins	60 for 25,000	1,200	.50	600.00
Razors, straps for	1.2 for 25,000	24	.33	7.92
Retort stands	0.24 for 25,000	5	.84	4.20
Rods, glass, assorted, 10-ounce, in package	60 for 25,000	1,200	.26	312.00
Sheeting, rubber, yards	4,800 for 25,000	96,000	1.00	96,000.00
Spools, glass, Halstead	2.4 for 25,000	48	.06	3.00
Sprinklers, powder, hard rubber	10 for 25,000	200	2.375	475.00
Stoves:				
Blue flame, extra wicks for	20 for 25,000	400	.04	16.00
Coal oil, blue flame, 1 burner	6 for 25,000	120	2.90	348.00
Primus, 1 burner	0.5 for 25,000	10	2.90	29.00
Primus, 2 burner	do.	10	5.00	50.00
Sugar, white, 12 pounds in can	800 for 25,000	16,000	1.42	22,720.00
Syringe:				
Extra wires for	120 for 25,000	2,400	.005	12.00
Hypodermic, extra needles for	3,600 for 25,000	72,000	.056	4,032.00
Penis, glass	6,000 for 25,000	120,000	.125	15,000.00
Penis, hard rubber	24 for 25,000	480	.375	180.00
Tags, diagnosis, in books	240 for 25,000	4,800	.21	1,008.00
Tape, cotton, pieces	500 for 25,000	10,000	.04	400.00
Tape measures, steel, 5-foot	3.6 for 25,000	72	.625	45.00
Thermometer, meteorological	1 for 25,000	20	.50	10.00
Trays, butter	120 for 25,000	2,400	1.20	2,880.00
Tubes, drainage, rubber, in yard lengths, 3 sizes	600 for 25,000	1,200	.116	1,392.00
Tubing, rubber, 1/2-inch	do.	12,000	.10	1,200.00
Urinals, enamel ware	96 for 25,000	1,920	.48	921.60
Vials:				
1-ounce	4,800 for 25,000	96,000	.144	13,824.00
2-ounce	7,200 for 25,000	144,000	.156	22,464.00
4-ounce, dozen	do.	144,000	.21	30,240.00
Wire cutters	6 for 25,000	120	.48	57.60
<b>Total</b>				<b>398,933.13</b>

1 Per gross



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION.

*Appropriation:* *Item name:* Miscellaneous articles.

Total cost of net requirements. . . . . \$855,984.70

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

See detailed sheets attached or Appendix No. 18.

QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL DIVISION—MISCELLANEOUS ARTICLES.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require-ments.	Cost basis.	Total cost.
Miscellaneous medical and hospital supplies and equipment for which it is impossible to foresee or estimate.	12½ per cent of all estimated items.	.....	.....	\$855,984.70

## ESTIMATE FOR

## EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Mutton tallow, refined.

	Strength.	Working basis.*	Requirements.
			Ounces.
Maintenance. . . . .	500,000	0.192 per 1,000 men per year. . . . .	96

Total requirements. . . . . 96

Cost Basis: Net requirements. . . . . 96  
 \$0.07. Total cost of net requirements. . . . . \$6.72

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 96 ounces mutton, as initial equipment for Engineer train of 500,000 men.

Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Nails, horseshoe,  
No. 7.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance.....	500, 000	10.536 per 1,000 men per year.....	5, 268
Total requirements.....			5, 268
Cost BASIS:      Net requirements.....			5, 268
\$0.15.      Total cost of net requirements.....			\$790. 20

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 5,268 pounds nails, as initial equipment for Engineer train of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Nails, horseshoe,  
No. 60.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance.....	500, 000	11.378 per 1,000 men per year.....	5, 689
Total requirements.....pounds..			5, 689
Cost BASIS:      Net requirements.....			5, 689
\$0.15.      Total cost of net requirements.....			\$853. 35

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue of Tables, Chief of Engineers.  
Basis: 5,689 pounds nails, as initial equipment for Engr. tr. for 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Nails, wire, 4d.

	Strength.	Working basis.*	Requirements
			Pounds.
Maintenance.....	500,000	0.916 per 1,000 men per year.....	458
Total requirements.....			458
Cost BASIS:      Net requirements.....			pounds..      458
\$0.035.      Total cost of net requirements.....			\$16.03

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue of Tables, Chief of Engineers.  
    Basis: 458 pounds nails as initial equipment for Engr. tr. of 500,000 men.  
    Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Nails, wire, 8d.

	Strength.	Working basis.*	Requirements
			Pounds.
Maintenance.....	500,000	0.916 per 1,000 men per year.....	458
Total requirements.....			pounds..      458
Cost BASIS:      Net requirements.....			458
\$0.035.      Total cost of net requirements.....			\$16.03

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue of tables, Chief of Engineers.  
    Basis: 458 nails, wire, as initial equipment for Engr. tr. of 500,000 men.  
    Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Nails, wire, 10d.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance .....	500,000	0.916 per 1,000 men per year.....	458
Total requirements.....			pounds.. 458
Cost BASIS:	Net requirements.....		458
\$0.035.	Total cost of net requirements.....		\$16.03

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue of tables, Chief of Engineers.  
Basis: 458 pounds wire nails, as initial equipment for Engr. tr. of 500,000 men.  
Estimated one year's supply.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Nails, wire, 16d.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance.....	500,000	195,796 per 1,000 men per year.....	97,989
Total requirements.....			pounds.. 97,989
Cost BASIS:	Net requirements.....		97,898
\$0.04.	Total cost of net requirements.....		\$3,915.92

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue of tables, Chief of Engineers.  
Basis: 97,898 pounds nails, wire, as initial equipment for Engr. tr. of 500,000 men.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Nails, wire, 20d.

	Strength.	Working basis.*	Requirements.
			<i>Pounds.</i>
Maintenance.....	500, 000	49.374 per 1,000 men per year.....	24, 687
Total requirements.....			pounds... 24, 687
Cost BASIS: Net requirements.....			24, 687
\$0.04. Total cost of net requirements.....			\$987. 48

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue of tables, Chief of Engineers.

Basis: 24,687 pounds nails, as initial equipment for Engr. tr. of 500,000 men.

Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Nails, wire spikes, 30d.

	Strength.	Working basis.*	Requirements.
			<i>Pounds.</i>
Maintenance.....	500, 000	129.6 per 1,000 men per year.....	64, 800
Total requirements.....			pounds... 64, 800
Cost BASIS: Net requirements.....			64, 800
\$0. 04. Total cost of net requirements.....			\$2. 592

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue of Tables, Chief of Engineers.

Basis: 64,800 pounds nails, as initial equipment for Engr. tr. of 500,000 men.

Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Nails, wire spikes, 60d.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance.....	500, 000	118.08 per 1,000 men per year.....	59, 040

Total requirements.....pounds.. 59, 040

Cost Basis:      Net requirements..... 59, 040  
\$0. 04.      Total cost of net requirements..... \$2, 361

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue of Tables, Chief of Engineers.  
Basis: 59,040 pounds nails, as initial equipment for Engr. tr. of 500,000 men.  
Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Nuts, assorted.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance.....	500, 000	12.16 per 1,000 men per year.....	6, 080

Total requirements..... 6, 080

Cost Basis:      Net requirements..... 6, 080  
\$0.10.      Total cost of net requirements..... \$608

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue of tables, Chief of Engineers.  
Basis: 6,080 pounds nuts, as initial equipment for Engr. tr. of 500,000 men.  
Estimates one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Odometers, with cases.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.25 per 1,000 men per year.....	125

Total requirements..... 125

Cost Basis:      Net requirements..... 125  
\$14.50.      Total cost of net requirements..... \$1,812.50

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue of tables, Chief of Engineers.  
    Basis: 624 odometers, as initial equipment for Engr. tr. of 500,000 men. Estimates life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.   •

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Office supplies, books, stationery.

Total cost of net requirements. . . . . \$1,403,310.91

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 6.

## QUARTERMASTER CORPS.

## GENERAL SUPPLIES DIVISION.

## OFFICE SUPPLIES, BOOKS, STATIONERY.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require- ments.	Cost basis.	Total cost.
Anchor, post screw (long).....	1.92 per 1,000 men per year.....	960	\$0.50	\$480.00
Anchors, post screw (short).....	3.84 per 1,000 men per year.....	1,920	.25	480.00
Bands, elastic, assorted (dozens)...	9,600 for 25,000.....	192,000	1.01	1,920.00
Bands, rubber, assorted.....	0.934 per 1,000 men per year.....	2 467	.90	420.30
Baskets, letter, wire (1).....	60 for 25,000.....	1,200	2.45	174.00
Baskets, waste-paper.....	10 for 25,000.....	200	2.75	150.00
Binders, loose-leaf, for medical history of post.....	6 for 25,000.....	120	.85	102.00
Blotters, hand.....	10 for 25,000.....	200	2.002	.40
Boards, artillery, 31 by 42 inches...	0.116 per 1,000 men per year.....	58	6.75	391.50
Boards, drawing, 23 by 31 inches, with trestle.....	0.21 per 1,000 men per year.....	105	4.25	498.75
Boards, drawing, 31 by 42 inches, with trestle.....	0.136 per 1,000 men per year.....	68	6.75	459.00
Boards, sketching.....	1.436 per 1,000 men per year.....	718	11.35	8,419.30
Books, blank, 8-vo, 150 pages.....	1,200 for 25,000.....	24,000	.16	3,840.00
Books, blank crown (cap), 250 pages	720 for 25,000.....	14,400	.51	7,344.00
Books, boxes, pressed steel, for regi- mental headquarters, battalions, and company library.....	0.118 per 1,000 men per year.....	59	3.85	227.15
Books, Walker, building estimator reference.....	0.118 per 1,000 men per year.....	59	4.75	280.25
Books, carbon.....	2.50 per 1,000 men per year.....	1,251	.15	187.65
Books, field message, Form 217A...	2,557.50 per division per year.....	61,380	2.097	5,953.86
Books, level.....	0.458 per 1,000 men per year.....	229	.40	91.60
Books, metric conversion table, Molesworth.....	0.54 per 1,000 men per year.....	270	.50	135.00
Books, Modern Gas Automobile, Page.....	0.118 per 1,000 men per year.....	59	2.20	129.80
Books, note, field.....	25.92 per 1,000 men per year.....	12,960	.20	2,592.00
Books, note, I P 103.....	3,252 per 1,000 men per year.....	1,626	1.00	1,626.00
Books, note, manifolding, 4 by 6 inch binders.....	120 for 25,000.....	2,400	.0697	167.28
Books, note, manifolding, 4 by 6 inch fillers.....	2,400 for 25,000.....	48,000	.0521	2,500.80
Books, photographic, note.....	0.416 per 1,000 men per year.....	208	.40	83.20
Books, Steam Power Plant En- gineering, Gibhardt.....	0.118 per 1,000 men per year.....	59	3.20	189.80
Books, stenographers.....	3.33 per 1,000 men per year.....	1,665	.05	83.25
Books, transit.....	4.224 per 1,000 men per year.....	2,112	.40	844.80
Books, vade, morum.....	0.118 per 1,000 men per year.....	59	.50	29.50
Cans, oil, T. W. (each).....	1.596 per 1,000 men per year.....	798	.635	506.73
Celluloid sheets, 15 by 15 inches....	27.2 per 1,000 men per year.....	13,600	.14	1,904.00
Chests, headquarters.....	0.108 per 1,000 men per year.....	54	10.00	540.00
Chests, sketching outfits.....	1.042 per 1,000 men per year.....	521	4.70	2,448.70
Chests for sketching equipment.....	0.392 per 1,000 men per year.....	196	4.70	921.20
Chests for topographic outfit.....	0.29 per 1,000 men per year.....	145	7.50	1,087.50

1 Per dozen.

2 Pound.

3 Each.

4 Number.

## QUARTERMASTER CORPS—Continued.

## GENERAL SUPPLIES DIVISION—continued.

## OFFICE SUPPLIES, BOOKS, STATIONERY—Continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Clips, paper.....	172.8 per 1,000 men per year.....	<sup>1</sup> 86,400	\$0.04	\$3,456.00
Cloth, tracing, 30 inches wide, 24-yard roll.	1.158 per 1,000 men per year.....	<sup>1</sup> 579	7.15	4,139.85
Cylinder, protection covers, No. 80, mimeograph.	6.4 per 1,000 men per year.....	3,200	.25	800.00
Dermax bottles.....	0.64 per 1,000 men per year.....	<sup>9</sup> 320	.25	80.00
Dictionary, English, small, 800 Funk & Wagnalls, desk stand, indexed.	0.118 per 1,000 men per year.....	59	1.50	88.50
Duplicator, engineer, special, complete and supplemental.	0.124 per 1,000 men per year.....	<sup>6</sup> 62	12.00	744.00
Envelopes, field, message, Form 144A.	8,010.5 per division per year.....	192,252	<sup>8</sup> 1.21	232.62
Envelopes, manila, 10 by 14 inches.	35.26 per 1,000 men per year.....	<sup>6</sup> 18,130	.03	543.90
Envelopes, official, large.....	36,000 for 25,000.....	720,000	<sup>8</sup> 3.28	2,361.60
Envelopes, official, letter.....	120,000 for 25,000.....	2,400,000	<sup>8</sup> 2.47	5,928.00
Envelopes, official, note (3½ by 6 inches, white).	10,000 for 25,000.....	200,000	<sup>8</sup> 2.48	496.00
Envelope openers.....	24 for 25,000.....	480	<sup>4</sup> .10	48.00
Envelopes, penalty, 3½ by 6½ inches.	77.6 per 1,000 men per year.....	<sup>1</sup> 38,800	.08	3,104.00
Envelopes, penalty, 3½ by 8½ inches.	250.8 per 1,000 men per year.....	<sup>1</sup> 125,400	.11	13,794.00
Envelopes, penalty, cloth, 4½ by 10½ inches.	125.4 per 1,000 men per year.....	<sup>1</sup> 62,700	.16	10,032.00
Erasers, rubber, ink, 32 pieces to pound.	1.006 per 1,000 men per year.....	<sup>8</sup> 503	.05	25.15
Erasers, rubber, pencil.....	3.56 per 1,000 men per year.....	<sup>8</sup> 1,780	.10	178.00
Erasers, rubber, pencil, pieces.....	720 for 25,000.....	14,400	<sup>4</sup> .02	288.00
Erasers, rubber, typewriter.....	480 for 25,000.....	9,600	<sup>4</sup> .045	432.00
Erasers, steel.....	48 for 25,000.....	960	<sup>4</sup> .1775	170.40
Erasers.....	4.774 per 1,000 men per year.....	<sup>8</sup> 2,387	.40	954.80
Fasteners, paper (boxes).....	720 for 25,000.....	14,400	<sup>7</sup> .39	5,616.00
Files, Shannon, for clinical histories (1).	24 for 25,000.....	480	.40	192.00
Formulas and tables for engineers, C. A. Pierce & Carver.	0.118 per 1,000 men per year.....	59	1.32	77.88
Frame, blue print, 24 by 30 inches.	0.012 per 1,000 men per year.....	<sup>6</sup> 6	16.28	97.68
Frames, blue print, 30 by 42 inches.	0.012 per 1,000 men per year.....	<sup>6</sup> 6	29.15	174.90
Glue, Le Pages.....	0.458 per 1,000 men per year.....	<sup>8</sup> 229	.50	114.50
Grips, Buffalo.....	7.5 per division per year.....	180	<sup>8</sup> 1.90	423.00
Grips, roller.....	0.01 per 1,000 men per year.....	5	.40	2.00
Handbook, American, for electrical engineers (Penter).	0.118 per 1,000 men per year.....	59	3.85	227.15
Handbook, automobile (Brooks)...	0.118 per 1,000 men per year.....	59	1.20	70.80
Handbook, civil engineers (Trautwine).	0.144 per 1,000 men per year.....	72	3.30	237.60
Handbook, highway engineers (Harger - Bonney - McGraw - Hill Publishing Co., New York.).	0.118 per 1,000 men per year.....	59	2.64	155.76
Handbook of Chemistry and Physics (Chemical Rubber Co., Cleveland, Ohio).	.....do.....	59	1.90	112.10
Handbook of construction plant, Dana.	.....do.....	59	4.40	259.60
Handbook of Explosives, Dupont Co.	.....do.....	59	1.00	59.00
Handbook, Waterworks, Flynn, Weston & Rogart.	.....do.....	59	5.20	306.80
Holders, timing pad.....	1.412 per 1,000 men per year.....	706	1.75	1,235.50
Ink, black, ½-pint bottles.....	2.116 per 1,000 men per year.....	1,058	.35	370.30
Ink, autographic, 6-ounce bottles.	0.048 per 1,000 men per year.....	<sup>10</sup> 24	.20	4.80
Ink, black, powder or tablets, sufficient in box for 1 quart liquid.	960 for 25,000.....	19,200	.18	3,456.00
Ink, carmine.....	0.838 per 1,000 men per year.....	<sup>10</sup> 419	.15	62.85
Ink, drawing, black.....	6.572 per 1,000 men per year.....	<sup>10</sup> 3,286	.15	492.90
Ink, drawing, blue.....	0.4134 per 1,000 men per year.....	<sup>10</sup> 2,067	.15	310.05
Ink, drawing, brown.....	1.542 per 1,000 men per year.....	<sup>10</sup> 771	.15	115.65
Ink, etching.....	0.018 per 1,000 men per year.....	<sup>11</sup> 24	2.00	48.00
Ink, hand-press, black.....	0.144 per 1,000 men per year.....	<sup>6</sup> 72	1.00	72.00
Ink, India, sticks.....	0.818 per 1,000 men per year.....	<sup>12</sup> 409	1.10	449.90
Ink, mimeograph No. 767.....	0.64 per 1,000 men per year.....	<sup>12</sup> 320	2.00	640.00
Ink pads, for No. 80 mimeograph, No. 1682.	0.384 per 1,000 men per year.....	192	.12	23.04
Ink, red (powder or tablets), sufficient in box for 4 ounces of fluid.	360 for 25,000.....	7,200	<sup>14</sup> .014½	1,044.00

<sup>1</sup> Boxes.<sup>2</sup> Per thousand.<sup>3</sup> Pounds.<sup>7</sup> Per box.<sup>9</sup> 1 each.<sup>11</sup> Cans.<sup>13</sup> Pounds.<sup>2</sup> Rolls.<sup>4</sup> Each.<sup>6</sup> Number.<sup>8</sup> Pint cans.<sup>10</sup> Bottles.<sup>12</sup> Sticks.<sup>14</sup> Per box for 1 qt



## QUARTERMASTER CORPS—Continued.

## GENERAL SUPPLIES DIVISION—continued.

## OFFICE SUPPLIES, BOOKS, STATIONERY—Continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Ink, red, 1-pint bottles.....	2.782 per 1,000 men per year.....	<sup>1</sup> 1,391	\$0.45	\$625.95
Ink, red, 2 ounces in bottle.....	240 for 25,000.....	4,800	<sup>2</sup> .04	192.00
Ink, for stamp pads.....	48 for 25,000.....	960	<sup>3</sup> .055	52.80
Inkstands (1).....	12 for 25,000.....	240	<sup>4</sup> .11	26.40
Ink wells, nonspilling.....	0.334 per 1,000 men per year.....	<sup>5</sup> 167	.25	41.75
Knives, ink, 2½-inch blade.....	0.824 per 1,000 men per year.....	412	.75	309.00
Labels, gummed, white, 2½ by 1½ inches, cartons (A1120).....	72 for 25,000.....	1,440	<sup>6</sup> 1.40	2,016.00
Labels, vial for (gross).....	1,200 for 25,000.....	24,000	.02½	660.00
Machines, adding, with spare parts, complete (each).....	0.024 per 1,000 men per year.....	12	147.00	1,764.00
Manual, Engineer, field, sets.....	1.584 per 1,000 men per year.....	792	1.00	792.00
Manuals, map, reproduction.....	0.064 per 1,000 men per year.....	32	1.25	40.00
Manuals, military photography....	0.164 per 1,000 men per year.....	82	.50	41.00
Manuals of American Railways Association.....	0.118 per 1,000 men per year.....	59	3.30	194.70
Measures, map.....	0.838 per 1,000 men per year.....	84	2.50	210.00
Mimeograph, Edison-Dick Rotary No. 80.....	0.01 per 1,000 men per year.....	5	10.15	50.75
Mimeograph, rotary, No. 80.....	0.004 per 1,000 men per year.....	2	104.00	208.00
Mimescope, Edison-Dick No. 2.....	0.01 per 1,000 men per year.....	5	19.60	98.00
Mimescope, No. 2, complete.....	0.004 per 1,000 men per year.....	2	66.00	132.00
Pads, pencil-pointing, 1½ by 4 inches.....	0.838 per 1,000 men per year.....	419	.05	20.95
Pads, sandpaper.....	3.92 per 1,000 men per year.....	1,960	.10	196.00
Pads, scratch, 6 by 9 inches.....	6.602 per 1,000 men per year.....	3,346	.07	234.22
Pads, sketching.....	3.92 per 1,000 men per year.....	1,960	1.25	2,450.00
Pads, stamp.....	0.836 per 1,000 men per year.....	418	.30	125.40
Pads, timing.....	39.312 per 1,000 men per year.....	19,656	.08	1,572.48
Paper weight.....	2 for 25,000.....	40	<sup>7</sup> .125	5.00
Paper, autographic transfer, 17 by 20 inches.....	0.096 per 1,000 men per year.....	<sup>8</sup> 48	5.70	273.60
Paper, blotting, for desks, quires....	300 for 25,000.....	6,000	<sup>9</sup> .66	3,960.00
Paper, blotting, small pieces for hand blotters.....	6,000 for 25,000.....	120,000	<sup>10</sup> .002	240.00
Paper, blotting, 3½ by 9½ inches, 50 to package.....	1.358 per 1,000 men per year.....	<sup>11</sup> 679	.13	88.27
Paper, blotting, 19 by 24 inches....	0.48 per 1,000 men per year.....	<sup>12</sup> 240	<sup>13</sup> .25	4.80
Paper, blue-print, 50 yards, 30-inch.....	0.064 per 1,000 men per year.....	<sup>14</sup> 32	3.70	118.40
Paper, book.....	0.408 per 1,000 men per year.....	<sup>15</sup> 204	7.15	1,458.60
Paper, brown print, 30 inches wide (10-yard rolls).....	1.024 per 1,000 men per year.....	<sup>16</sup> 512	1.10	563.20
Paper, carbon, cap, 100 sheets box.....	240 for 25,000.....	4,800	<sup>17</sup> .36	1,728.00
Paper, carbon.....	2.988 per 1,000 men per year.....	<sup>18</sup> 1,494	1.10	1,643.40
Paper, carbon, letter (100 sheets in box).....	960 for 2,500.....	19,200	<sup>19</sup> .36	6,912.00
Paper, cross-section, 20 inches wide.....	1.438 per 1,000 men per year.....	<sup>20</sup> 719	.95	683.05
Paper, drawing, 15 by 15 inches....	72 per 1,000.....	<sup>21</sup> 36,000	4.80	172,800.00
Paper, drawing, 22 by 30.....	0.928 per 1,000 men per year.....	<sup>22</sup> 464	5.70	8,908.80
Paper, drawing, 24 inches by 5 yards.....	1.13 per 1,000 men per year.....	565	.80	452.00
Paper, drawing, 30 inches wide, 50 rolls.....	0.262 per 1,000 men per year.....	<sup>23</sup> 131	3.25	425.75
Paper, manifolding, cap, 200 sheets, in package.....	360 for 25,000.....	7,200	.23	1,656.00
Paper, manifolding, letter, 500 sheets in package.....	900 for 25,000.....	18,000	.38	6,840.00
Paper, plain, table sheets.....	0.48 per 1,000 men per year.....	<sup>24</sup> 240	1.40	28.80
Paper, ruled, 8 by 10½ inches.....	2.37 per 1,000 men per year.....	<sup>25</sup> 1,185	.48	568.80
Paper, sketching, board sheets.....	6.776 per 1,000 men per year.....	<sup>26</sup> 3,388	<sup>27</sup> 2.20	51.70
Paper, stencil, dermatype No. 880..	0.384 per 1,000 men per year.....	<sup>28</sup> 192	9.90	1,900.80
Paper, tracing, cross-section, metric graduations, sheets 15 by 15 inches.....	72 per 1,000 men per year.....	<sup>29</sup> 36,000	7.20	259,200.00
Paper, tracing, plain, 15 by 15 inches.....	72 per 1,000 men per year.....	<sup>30</sup> 36,000	<sup>31</sup> .015	259,200.00
Paper, typewriter, cap, 250 sheets in package.....	300 for 25,000.....	6,000	<sup>32</sup> .57½	3,450.00
Paper, typewriter, letter, 500 sheets in package.....	700 for 25,000.....	14,000	.82	11,480.00
Paper, typewriter, 8 by 10½ inches..	1.19 per 1,000 men per year.....	<sup>33</sup> 595	.48	285.60
Paper, typewriter, medium, 8 by 10½ inches.....	0.94 per 1,000 men per year.....	<sup>34</sup> 470	.48	225.60
Paper, typewriter, 8 by 13 inches....	1.118 per 1,000 men per year.....	<sup>35</sup> 559	.48	268.32
Paper, wrapping, 40 by 48 inches....	0.2 per 1,000 men per year.....	<sup>36</sup> 100	.27	27.00
Paper, wrapping, blue, quires.....	144 for 25,000.....	2,880	.13	374.40
Paper, wrapping, brown, quires.....	1,440 for 25,000.....	28,800	.195	5,616.00
Paper, wrapping, white, quires.....	240 for 25,000.....	4,800	.13	624.00

<sup>1</sup> Bottles.<sup>2</sup> Each.<sup>3</sup> Number.<sup>4</sup> Per carton of 900 sheets.<sup>5</sup> Gross.<sup>6</sup> Packages.<sup>7</sup> Sheets.<sup>8</sup> Dozen.<sup>9</sup> Rolls.<sup>10</sup> Reams.<sup>11</sup> Boxes.<sup>12</sup> Per box.<sup>13</sup> Pads.<sup>14</sup> Quires.<sup>15</sup> Per sheet.

## QUARTERMASTER CORPS—Continued.

## GENERAL SUPPLIES DIVISION—continued.

## OFFICE SUPPLIES, BOOKS, STATIONERY—Continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Paper, writing, letter.....	280 for 25,000.....	7,200	\$0.04	304.00
Paper, writing, letter, 100 sheets in pad.....	1,200 for 25,000.....	24,000	1.03	318.00
Paper, writing, note, 100 sheets in pad.....	4,000 for 25,000.....	80,000	1.04	3,300.00
Paste, library.....	1.672 per 1,000 men per year.....	1,336	10	52.00
Do.....	1.118 per 1,000 men per year.....	900	40	223.00
Paste, photo and library, tubes.....	240 for 25,000.....	4,800	1.04	106.00
Paste, photo and library.....	300 for 25,000.....	7,200	1.19	1,004.00
Pencils, blue, light.....	42.544 per 1,000 men per year.....	21,772	.08	1,089.60
Pencils, brown.....	4.32 per 1,000 men per year.....	2,160	.08	108.00
Pencils, colored.....	25.792 per 1,000 men per year.....	12,896	.08	644.80
Pencils, drawing, 3 H.....	29.848 per 1,000 men per year.....	14,924	.08	746.20
Pencils, drawing, 1 H.....	52.96 per 1,000 men per year.....	26,480	.08	1,321.50
Pencils, drawing, H.....	68.268 per 1,000 men per year.....	34,134	.08	1,706.70
Pencils, green.....	24.342 per 1,000 men per year.....	12,171	.08	608.55
Pencils, indelible.....	1,000 for 25,000.....	20,000	1.04	900.00
Pencils, lead, No. 2.....	14,400 for 25,000.....	288,000	1.01	3,040.00
Pencils, lead, dozen.....	480.5 per division per year.....	11,522	.16	1,443.12
Pencils, yellow.....	4.32 per 1,000 men per year.....	2,160	.08	108.00
Pencils, No. 2, with eraser.....	48.944 per 1,000 men per year.....	23,472	.08	1,173.60
Pencils, orange.....	4.32 per 1,000 men per year.....	2,160	.08	108.00
Pencils, red.....	24.342 per 1,000 men per year.....	12,171	.08	608.55
Penholders.....	300 for 25,000.....	6,000	2.24	135.00
Do.....	2.028 per 1,000 men per year.....	1,014	1.20	25.35
Pen points, assorted, gross.....	0.594 per 1,000 men per year.....	297	.80	185.50
Pens, crowquill, with holder.....	1.702 per 1,000 men per year.....	851	.46	462.85
Pens, mapping, with holders, cards.....	1.1 per 1,000 men per year.....	550	.45	247.50
Pens, steel.....	240 for 25,000.....	4,800	1.46	15.31
Pins, cones.....	2.448 per 1,000 men per year.....	1,224	.10	122.30
Pins, push.....	0.416 per 1,000 men per year.....	208	.18	31.30
Pocketbook, architects, builders, Kidder.....	0.118 per 1,000 men per year.....	59	2.85	27.15
Pocketbook, mechanical engineers, Kent.....	do.....	59	2.85	27.15
Pockets, pencil.....	6.672 per 1,000 men per year.....	3,336	1.73	5,626.00
Presses, hand, lithographic.....	0.01 per 1,000 men per year.....	5	180.85	904.25
Protectors, pencil-point.....	5.606 per 1,000 men per year.....	2,803	.03	84.09
Ribbons, typewriter.....	900 for 25,000.....	18,000	1.18	3,436.00
Rulers.....	14 for 25,000.....	280	1.18	33.04
Ruler, boxwood.....	0.414 per 1,000 men per year.....	207	.55	112.95
Ruler, 18-inch.....	0.102 per 1,000 men per year.....	51	.55	28.05
Scales, architects, 12-inch, with sheath.....	0.168 per 1,000 men per year.....	84	1.30	126.00
Scales, engineers, 12-inch, with sheath.....	do.....	84	1.30	126.00
....., 1,000.....	1.476 per 1,000 men per year.....	738	2.00	1,478.00
....., 20 for 25,000.....	20 for 25,000.....	400	.35	140.00
....., 30 for 25,000.....	30 for 25,000.....	600	1.20	720.00
....., 0.186 per 1,000 men per year.....	0.186 per 1,000 men per year.....	93	.70	65.10
....., 0.012 per 1,000 men per year.....	0.012 per 1,000 men per year.....	6	1.40	8.40
....., 0.34 per 1,000 men per year.....	0.34 per 1,000 men per year.....	170	.05	8.50
....., 0.064 per 1,000 men per year.....	0.064 per 1,000 men per year.....	32	.55	17.60
....., 0.212 per 1,000 men per year.....	0.212 per 1,000 men per year.....	106	.35	37.25
....., 0.058 per 1,000 men per year.....	0.058 per 1,000 men per year.....	29	.10	2.90
....., 0.168 per 1,000 men per year.....	0.168 per 1,000 men per year.....	84	.10	8.40
....., 240 for 25,000.....	240 for 25,000.....	4,800	.15	720.00
....., 0.6 per 1,000 men per year.....	0.6 per 1,000 men per year.....	300	1.30	390.00
....., 0.134 per 1,000 men per year.....	0.134 per 1,000 men per year.....	67	.70	46.90
....., 0.11 per division per year.....	0.11 per division per year.....	5	5.20	26.00
....., do.....	do.....	3	1.45	4.35
....., do.....	do.....	3	1.40	4.20
....., 0.144 per 1,000 men per year.....	0.144 per 1,000 men per year.....	72	2.70	194.40
....., 4.488 per 1,000.....	4.488 per 1,000.....	2,244	1.73	3,883.12
....., 0.144 per 1,000 men per year.....	0.144 per 1,000 men per year.....	72	1.85	132.20
....., 0.24 for 25,000.....	0.24 for 25,000.....	480	5.00	2,400.00
....., 3.038 per 1,000 men per year.....	3.038 per 1,000 men per year.....	1,519	.40	607.60
....., 0.636 per 1,000 men per year.....	0.636 per 1,000 men per year.....	318	.45	143.10
....., 1,200.....	1,200.....	1,200	0.118	141.60
....., 1.728 per 1,000 men per year.....	1.728 per 1,000 men per year.....	864,000	0.04	4,220.00
Triangles 30-60°, 10 inches.....	0.434 per 1,000 men per year.....	217	.35	75.95
Triangle, 45°, 8 inches.....	do.....	217	.40	86.80
Tubes, opaque.....	0.012 per 1,000 men per year.....	6	.20	1.20
Tubes, tin.....	0.604 per 1,000 men per year.....	302	.80	271.60

1 Per pad.

2 Tubes.

3 Jars.

4 Each.

5 Number.

6 Per gross.

7 Per dozen.

8 Gross.

9 Dozen.

10 Per set.

11 Sets.

12 Boxes.

13 Spools.

14 Feet.

QUARTERMASTER CORPS—Continued.

GENERAL SUPPLIES DIVISION—continued.

OFFICE SUPPLIES, BOOKS, STATIONERY—Continued.

Name of item.	Working basis.	Require- ments.	Cost basis.	Total cost.
Twine in ball, coarse, balls.....	60 for 25,000.....	1,200	<sup>1</sup> 80.30	\$180.00
Twine, coarse, pounds.....	216 for 25,000.....	4,320	<sup>1</sup> .30	1,296.00
Twine, 2-ounce balls.....	4.41 per 1,000 men per year.....	<sup>2</sup> 2,205	.05	110.25
Typewriters (1).....	3 for 25,000.....	60	67.50	4,050.00
Typewriters, adding machines and computing machines.	0.947 per capita.....	473,500.00	.....	473,500.00
Typewriters, Corona.....	0.026 per 1,000 men per year.....	13	50.00	650.00
Varnish, mimeograph, 2-ounce bot- tles.	0.384 per 1,000 men per year.....	<sup>3</sup> 192	.20	38.40
Wax, sealing.....	1.476 per 1,000 men per year.....	<sup>4</sup> 738	.05	44.28
Total.....	.....	.....	.....	1,408,310.91

<sup>1</sup> Per pound.

<sup>2</sup> Balls.

<sup>3</sup> Bottles.

<sup>4</sup> Sticks.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

*Appropriation:* Previously purchased by Medical Department. *Item name:* Oil,  
transformer, 5-gallon cans, boxed.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	0.24 for 25,000 . . . . .	4. 8
Total requirements . . . . .			4. 8
Cost Basis:	Net requirements . . . . .		4. 8
\$0.44.	Total cost of net requirements . . . . .		\$2. 11

\* "Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimate based on experience.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

*Appropriation:* Previously purchased by Medical Department. *Item name:* Oil  
(gas engine cylinder), 5 gallons in can.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	2.4 for 25,000 . . . . .	50
Total requirements . . . . .			50
Cost Basis:	Net requirements . . . . .		50
\$0.58.	Total cost of net requirements . . . . .		\$29

\* "Working basis" is the quantity required per man or per unit for stated period;  
or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimate based on experience.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## RAW MATERIALS DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Oil, lavender, 1-ounce bottles.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.048 per 1,000 men per year.....	24 bottles.
Total requirements.....			24
Cost Basis:	Net requirements.....		24
\$0.50.	Total cost of net requirements.....		\$12

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 24 bottles oil, as initial supply for Engr. Tr. of 500,000 men. Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## RAW MATERIALS DIVISION.

*Appropriation:* *Item name:* Oil, olive, ½-pint cans.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.24 per 1,000 men per year.....	120 cans.
Total requirements.....			cans.. 120
Cost Basis:	Net requirements.....		120
\$0.50 pint.	Total cost of net requirements.....		\$30

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 120 cans oil, as initial supply for Engr. Tr. of 500,000 men. Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## RAW MATERIALS DIVISION.

*Appropriation:* Previously purchased by Medical Department.  
white enamel, 1 gallon in tin.

*Item name:* Paint,

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	120 for 25,000.....	2,400

Total requirements..... 2,400

Cost BASIS: Net requirements..... 2,400  
\$2.50 per gal. Total cost of net requirements..... \$6,000

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Estimate based on experience.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Procured in the past by Office Chief Signal Officer.  
Panels, art. light or medium rect. sets.

*Item name:*

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat divisions, 4 divisions.	4.68 per division per year.	112

Cost BASIS: Net requirements..... 112  
\$2.06 per set. Total cost of net requirements..... \$230.72

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
13 panels, art. light or medium rect. sets, issued per div. 4.68 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Quotations received by quartermaster from contractors.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name  
Panels, Heavy Artillery identification, large sets.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat divisions, 4 base divisions.	1.245 per division per year.	30

Cost Basis:	Net requirements. . . . .	30
\$17.50.	Total cost of net requirements. . . . .	\$525

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
3.45 panels, Heavy Artillery identification, large sets, issued per division.  
1.245 maintenance per division per year. Wastage for United States training  
approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Quotations received by quartermaster from contractors.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name:  
Panels, identification, corps, sets.

	Strength	Working basis.*	Requirements.
Maintenance . . . . .	20 combat divisions, 4 base divisions.	0.075 per division per year.	2

Cost Basis:	Net requirements. . . . .	2
\$1.57 per set.	Total cost of net requirements. . . . .	\$3.14

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
0.20 panels, identification corps, sets, issued per division. 0.075 maintenance  
per division per year. Wastage for United States training approved by Chief  
Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Quotations received by quartermaster from contractors.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:*  
Panels, inf. ident. bn. sets.

	Strength.	Working basis.*	Requirements.
Maintenance .....	20 combat div., 4 base div.	3.84 per div. per year.	92
<b>COST BASIS:</b>			
	Net requirements .....		92
\$1.19 per set.	Total cost of net requirements .....		\$109.48

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

10.66 panels, inf. ident. bn. sets, issued per div. 3.84 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Quotations received by quartermaster from contractors.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:*  
Panels, inf. ident. div. sets.

	Strength.	Working basis.*	Requirements.
Maintenance .....	20 combat div., 4 base div.	0.32 per div. per year.	8
<b>COST BASIS:</b>			
	Net requirements .....		8
\$2.71 per set.	Total cost of net requirements .....		\$21.68

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

0.87 panels, inf. ident. div. sets, issued per div. 0.32 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Quotations received by quartermaster from contractors.



ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.      Item name:  
Panels, Inf. ident. brig. sets.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	0.63 per div. per year.	15

Cost Basis:	Net requirements . . . . .	15
\$1.71 per set.	Total cost of net requirements . . . . .	\$25. 65

- \* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1.75 panels, inf. ident. brig. sets, issued per div: 0.63 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Quotations received by quartermaster from contractors.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.      Item name:  
Panels, inf. ident. regt. sets.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	1.44 per div. per year.	35

Cost Basis:	Net requirements . . . . .	35
\$1.57 per set.	Total cost of net requirements . . . . .	\$54. 95

- \* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
4 panels, inf. ident. regt. sets, issued per div. 1.44 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Quotations received by quartermaster from contractors.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

**MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:*  
Panels, inf. marking.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	937 per div. per year..	22,488

<b>COST BASIS:</b>	Net requirements.....	22,488
\$0.10 per set.	Total cost of net requirements.....	<b>\$2,248.80</b>

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
2,602.66 panels, inf. marking, issued per div.; 937 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price of latest order.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

**MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:*  
Panels, inf. rect. sets.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	6.21 per div. per year.	149

<b>COST BASIS:</b>	Net requirements.....	149
\$0.72 per set.	Total cost of net requirements.....	<b>\$107.28</b>

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
17.25 panels, inf. rect. sets, issued per div.; 6.21 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Quotations received by Quartermaster from contractors.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

**MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer.  
Panels, heavy art. rect., large sets.

*Item name:*

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div.. 4 base div.	1,245 per div. per year.	30

Cost Basis:	Net requirements.....	30
\$13.35 per set.	Total cost of net requirements.....	\$400.50

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

6.45 panels, heavy art. rect., large sets, issued per div.; 1.245 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Quotations received by quartermaster from contractors.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

**MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer.  
Panels, light art. ident. sets.

*Item name:*

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div.. 4 base div.	3.30 per div. per year.	79

Cost Basis:	Net requirements.....	79
\$3.85 per set.	Total cost of net requirements.....	\$304.15

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

916 panels, light art. ident. Sets, issued per div.; 3.30 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Unit price of latest order.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name:  
Panels, medium art. ident. sets.

	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	20 combat div., 4 base	0.69 per div. per year.	17

Cost Basis:	Net requirements. . . . .	17
\$3.75 per set.	Total cost of net requirements. . . . .	\$63.75

- \* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1.91 panels, medium art. ident. sets, issued per div.  
0.69 Maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Quotations received by quartermaster from contractors.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name:  
Panels, trench art. ident. sets.

	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	20 combat div., 4 base div.	0.12 per div. per year.	3

Cost Basis:	Net requirements. . . . .	3
\$7.99 per set.	Total cost of net requirements. . . . .	\$23.97

- \* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
0.33 panels, trench art. ident. sets, issued per div.  
0.12 Maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Quotations received by quartermaster from contractors.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Pantographs.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	0.058 per 1,000 men per year . . . . .	29

Total requirements . . . . . 29

Cost BASIS: Net requirements . . . . . 29  
 \$7.50. Total cost of net requirements . . . . . \$217.50

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 143 pantographs as initial equipment for Engineer Troops of 500,000 men. Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Item name: Paper, developing, 3½ by 5½.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	0.48 per 1,000 men per year . . . . .	240 gross.

Total requirements . . . . . 240

Cost BASIS: Net requirements . . . . . 240  
 \$1.65. Total cost of net requirements . . . . . \$396

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 240 gross as initial supply for Engineer Troops of 500,000 men. Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 19—.

QUARTERMASTER CORPS.

M. AND E. M. DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Paper, tracing,  
30-inch, 20-yard rolls.

	Strength.	Working basis.*	Requirements.
Maintenance .....	500	1.95 per 1.000 men....	975

Cost Basis:	Net requirements.....	975
\$1.50.	Total cost of net requirements.....	\$1, 462. 50

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables. Chief of Engineers.  
Basis: 975 issued as initial supply for Engineer troops with army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation; Formerly procured by Engineers. Item name: Paper, printing,  
3¼ by 5½.

	Strength.	Working basis.*	Requirements.
Maintenance .....	500,000	0.288 per 1.000 men per year .....	144 gross.

Total requirements.....	144 gross.
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Cost Basis:	Net requirements.....	144
\$1.55.	Total cost of net requirements.....	\$223. 20

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 144 gross paper as initial supply for Engineer troops of 500,000 men.  
Estimated, one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

M. AND E. M. DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Paper, drawing, single, 24-inch by 5-yard roll, in Japan tube.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	1.5 per 1,000 men . . . . .	750

COST BASIS:	Net requirements . . . . .	750
\$0.73.	Total cost of net requirements . . . . .	\$547.50

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issued tables, Chief of Engineers.

Basis: 750 issued as initial supply for Engineer troops, with army of 500,000 men.

This material is not in stock and is to be purchased to cover initial issue.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Paste, soldering, 4-ounce tins.

	Strength.	Working Basis.*	Requirements.
Maintenance . . . . .	500,000	0.458 per 1,000 men per year . . . . .	229 tins.

Total requirements . . . . .	229
------------------------------	-----

COST BASIS:	Net requirements . . . . .	229
\$0.10.	Total cost of net requirements . . . . .	\$22.90

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 229 tins paste as initial supply for Engineer troops of 500,000 men. Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Photo clips.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.416 per 1,000 men per year.	208 dozen.

Total requirements.....	208 dozen.
Cost BASIS:      Net requirements.....	208 dozen.
\$0.18.      Total cost of net requirements.....	\$37.44

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 208 dozen photo clips, as initial supply for Engineer troop of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.      Item name: Pikes, wire.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	4.46 per div. per year..	107

Cost BASIS:      Net requirements.....	107
\$4.50 each.      Total cost of net requirements.....	\$481.50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
14.41 pikes, wire, issued per division. 4.46 maintenance per division per year.  
Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Procured in the past by office Chief Signal Officer.  
Pins, surveyor's.

*Item name:*

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	0.64 per div. per year.	15
Cost BASIS:	Net requirements.....		15
\$0.07 each.	Total cost of net requirements.....		\$1.05

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

2.66 pins, surveyor's, issued per division; 0.64 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Unit price of latest order.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers.  
20 by 26 inches.

*Item name:* Plates, zinc grained,

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	0.154 per 1,000 men per year.	77
Total requirements.....			77
Cost BASIS:	Net requirements.....		77
\$1.80.	Total cost of net requirements.....		\$138.60

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 384 plates, zinc grained, as initial equipment for Engineer troops of 500,000 men. Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 19—.

**QUARTERMASTER CORPS.****M. AND E. M. DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Plane table, 16 by 16 inches, etc.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	0.834 per 1,000 men . . .	417

Cost Basis: Net requirements . . . . . 417  
 \$28.50. Total cost of net requirements . . . . . \$12,340.50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 417 issued as initial supply for Engineer troops with army of 800,000 men. This material is not in stock and is to be purchased to cover initial issue.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 19—.

**QUARTERMASTER CORPS.****M. AND E. M. DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Plane table, 24 by 31 inches.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	1.05 per 1,000 men . . . .	524

Cost Basis: Net requirements . . . . . 524  
 \$19.35. Total cost of net requirements . . . . . \$10,139.40

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 524 issued as initial supply for Engineer troops with army of 500,000 men. This material is not in stock and is to be purchased to cover initial issue.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Plates, zinc grained  
22 by 32 inches.

	Strength.	Working basis *	Requirements.
Maintenance.....	500,000	0.154 per 1,000 men per year.....	77
Total requirements.....			77
Cost Basis:	Net requirements.....		77
\$1.90.	Total cost of net requirements.....		\$146.30

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 384 plats, zinc grained, as initial equipment for Engineer troops of 500,000 men. Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## M. AND E. M. DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Plane table, 18 by 24 inches, complete.

	Strength.	Working basis *	Requirements.
Maintenance.....	500	1.46 per 1,000 men.....	730
Cost Basis:	Net requirements.....		730
\$14.50.	Total cost of net requirements.....		\$10,585

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 730 issued as initial supply for Engineer troops with Army of 500,000 men. This material is not in stock and is to be purchased to cover initial issue.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Estimated or recent orders.

ESTIMATE FOR  
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FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by office Chief Signal Officer. Item name  
Poles, lance.

	Strength.	Working basis.*	Requirements
Maintenance.....	20-combat div., 4-base div.	392 per div. per year..	9.40

COST BASIS:	Net requirements.....	9.40
\$0.65 each.	Total cost of net requirements.....	\$6,115.2

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1,088.33 poles, lance, issued per division. 392 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.

ESTIMATE FOR  
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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by office Chief Signal Officer. Item name  
Poles, pike, 14-foot.

	Strength.	Working basis.*	Requirements
Maintenance.....	20-combat div., 4-base div.	1.925 per div. per year.	4

COST BASIS:	Net requirements.....	4
\$1.50 each.	Total cost of net requirements.....	\$6,115.2

\*"Working basis" is the quantity required per man or per unit for stated period or other factors used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
3.20 poles, pike, 14-foot, issued per division; 1.925 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

M. &amp; E. M. DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Plumb line.

	Strength.	Working basis.*	Requirements.
Maintenance. ....	500	2.91 per 1,000 men.....	1,455

COST BASIS: Net requirements..... 1,455  
 \$0.85. Total cost of net requirements..... \$1,236.75

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

This material is not in stock and is to be purchased to cover initial issue. Maintenance has already been figured on previous sheets.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Protractors, rectangular.

	Strength.	Working basis.*	Requirements.
Maintenance. ....	500,000	0.29 per 1,000 men per year.....	145

Total requirements..... 145

COST BASIS: Net requirements..... 145  
 \$2.25. Total cost of net requirements..... \$326.25

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 145 protractors as initial equipment for Engr. tr. of 500,000 men.

Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR, 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Printing frames, 5 by 7 inches.

	Strength.	Working basis.*	Requirements
Maintenance.....	500, 000	0.14 per 1,000 men per year.....	70
Total requirements.....			70
Cost BASIS: Net requirements.....			70
\$0.60. Total cost of net requirements.....			\$42

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue table, Chief of Engineers.  
Basis: 352 printing frames, as initial equipment for Engr. tr. of 500,000 men.  
Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
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Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Printing frame glass, 5 by 7 inches.

	Strength.	Working basis.*	Requirements
Maintenance.....	500, 000	0.134 per 1,000 men per year.....	67
Total requirements.....			67
Cost BASIS: Net requirements.....			67
\$0.60. Total cost of net requirements.....			\$40.20

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 336 printing frame glass, as initial equipment for Engr. tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
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FORM F 1.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Proportional dividers.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.116 per 1,000 men per year.....	58

Total requirements..... 58

COST BASIS:      Net requirements..... 58  
\$16.20.      Total cost of net requirements..... \$939. 60

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue tables, Chief of Engineers.  
    Basis: 291 proportional dividers, as initial equipment for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Protractors, C. S. semicircular, 6-inches.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.532 per 1,000 men per year.....	266

Total requirements..... 266

COST BASIS:      Net requirements..... 266  
\$3. 20.      Total cost of net requirements..... \$851. 20

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue tables, Chief of Engineers.  
    Basis: 1,331 protractors, G. S., as initial equipment for Engr. Tr. of 500,000 men. Estimated life of equipment 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

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FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

M. AND E. M. DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Protractor, graduated in mills.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.32 per 1,000 men.....	160
Cost BASIS:	Net requirements.....		160
\$3.50.	Total cost of net requirements.....		\$560

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS.

Authority: Issue tables, Chief of Engineers.

Basis: 160 issued as initial supply for Engineer troops with Army of 500,000 men.

This material is not in stock and is to be purchased to cover initial issue.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

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## QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Protractors, G. S. semicircular with arm.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.394 per 1,000 men per year.....	197
Total requirements.....			197
Cost BASIS:	Net requirements.....		197
\$24.	Total cost of net requirements.....		\$4, 728

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 987 protractors, G. S. as initial equipment for Engr. Tr. of 500,000 men.

Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.



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QUARTERMASTER CORPS.

M. AND E. M. DIVISION.

Appropriation: Formerly procured by Engineers.

Item name: Protractor, zylonite rectangular.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1.5 per 1,000 men.....	750

Cost Basis: Net requirements.....750

\$2.15. Total cost of net requirements.....\$1,612.50

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
This material is not in stock and is to be purchased to cover initial issue. Maintenance has already been figured on previous sheets.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.

Item name: Protractors, rectangular.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	1.27 per 1,000 men per year.....	635

Total requirements.....635

Cost Basis: Net requirements.....635

\$2.25. Total cost of net requirements.....\$1,428.75

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS.  
Authority: Issue Tables, Chief of Engineers.  
Basis: 3,175 protractors, as initial equipment, for Engr. tr. of 500,000 men.  
Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
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QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Pumice, powdered, in cans.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.24 per 1,000 men per year.....	120 pounds.

Total requirements.....pounds.. 120

Cost BASIS:      Net requirements..... 120  
\$0.10.              Total cost of net requirements..... \$12

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 120 pounds pumice, as initial equipment for Engineer troops of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR  
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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Reducer, tubes.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.114 per 1,000 men per year.....	67

Total requirements..... 67

Cost BASIS:      Net requirements..... 67  
\$0.35.              Total cost of net requirements..... \$23. 45

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 336 reducer tubes, as initial equipment for Engineer troops of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.    Item name:  
Reels, barrow payout.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	0.38 per div. per year.	9

Cost BASIS:	Net requirements.....	9
\$8.55 each.	Total cost of net requirements.....	\$76. 95

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1.58 reels, barrow payout, issued per division; 0.38 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.

ESTIMATE FOR

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.    Item name:  
Reels, breast.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	8.54 per div. per year.	205

140002	Net requirements.....	205
Cost BASIS:	Total cost of net requirements.....	\$1, 961. 85
\$9.57 each.		

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
35.58 reels, breast, issued per division; 8.54 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price of latest order.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:*  
Reels, trench, new Signal Corps type.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	15.5 per div. per year.	372

110244.

**COST BASIS:** Net requirements..... 372  
\$7.37 per set. Total cost of net requirements..... \$2,741.64

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

64.58 reels, trench, new Signal Corps type, issued per division; 15.5 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Unit price of latest order.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Reels, wire firing.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	1.152 per 1,000 men per year.	576

Total requirements..... 576

**COST BASIS:** Net requirements..... 576  
\$3.85. Total cost of net requirements..... \$2,217.60

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 576 reels, wire firing, as initial equipment for Engineer troops of 500,000 men. Estimated 1 year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Repair kit, steel tape.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.102 per 1,000 men per year.	51
Total requirements.....			51
Cost Basis:      Net requirements.....			51
\$14.55.      Total cost of net requirements.....			\$742.05

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 256 repair kit as initial equipment for Engineer troops of 500,000 men.  
Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS.  
Recent purchases.

ESTIMATE FOR

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Rivets, sets of 8 numbers.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.058 per 1,000 men per year.	29
Total requirements.....			29
Cost Basis:      Net requirements.....			29
\$0.25.      Total cost of net requirements.....			\$7.22

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 144 rivets, as initial equipment for Engineer troops of 500,000 men.  
Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Rivets, harness, copper, assorted.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance.....	500, 000	0.288 per 1,000 men per year.....	144

Total requirements..... 144 pounds.

Cost BASIS:      Net requirements..... 144  
\$0. 25.      Total cost of net requirements..... \$36

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 144 pounds rivets, as initial equipment, for Engineer troops of 500,000 men. Estimated one year’s supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by office Chief Signal Officer.      Item name: Rods, ground, Type E.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat divisions, 4 base divisions.	7.05 per division per year.	169

Cost BASIS:      Net requirements..... 169  
\$0.058 each.      Total cost of net requirements..... \$9. 80

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
19.58 rods, ground, Type E, issued per division; 7.05 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.

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QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.

Item name: Rods, level, Philadelphia.

	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	500,000	0.14 per 1,000 men per year. . . . .	70
Total requirements. . . . .			70
Cost BASIS: Net requirements. . . . .			70
\$18. Total cost of net requirements. . . . .			\$1,260

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 352 rods, level, as initial equipment for Engineer troops of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

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QUARTERMASTER CORPS.

GENERAL SUPPLIES DIVISION.

Appropriation: Item name: Rope, and rope materials.

Total cost of net requirements..... \$15,434.30

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 7.

QUARTERMASTER CORPS.

GENERAL SUPPLIES DIVISION—ROPE, AND ROPE MATERIALS.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require- ments.	Cost basis.	Total cost.
Marline, pounds.....	137.5 per division per year.....	3,300	\$0.35	\$1,155.00
Marline.....	23.94 per 1,000 men per year.....	<sup>1</sup> 11,620	.20	2,304.00
Cord, sash, No. 6, feet.....	560 per division per year.....	13,440	<sup>2</sup> .58	117.16
Clothes line, manila, feet.....	3,600 for 25,000.....	72,000	<sup>3</sup> .0085	612.00
Rope, $\frac{1}{2}$ -inch.....	3,600 for 25,000.....	72,000	<sup>3</sup> .0265	1,188.00
Rope, bolt, manila, $\frac{1}{2}$ -inch diame- ter, pounds.....	31.2 per 1,000 men per year.....	1,560	.325	507.00
Rope, bolt, manila, $\frac{1}{2}$ -inch diame- ter, pounds.....	3.72 per 1,000 men per year.....	1,860	.32	595.20
Rope, bolt, manila, $\frac{1}{2}$ -inch diame- ter, pounds.....	14.28 per 1,000 men per year.....	9,140	.315	2,879.10
Rope, manila, $\frac{1}{2}$ -inch diameter, 1,200 feet, coils.....	} 0.086 per 1,000 men per year.....	43	{ <sup>3</sup> .026 <sup>4</sup> 31.20	1,341.60
Rope, manila, $\frac{3}{4}$ -inch diameter, 1,200 feet, coils.....		24		
Rope, manila, 1-inch diameter, 250 $\frac{1}{2}$ -foot, coll.....	0.23 per 1,000 men per year.....	115	23.50	2,702.50
Rope, $\frac{1}{2}$ -inch, feet.....	120 per division per year.....	2,880	.01121	32.29
Rope, $\frac{3}{4}$ -inch, feet.....	240 per division per year.....	5,760	.0508	292.61
Rope, $\frac{1}{2}$ -inch, feet.....	120 per division per year.....	2,880	.023	66.24
				15,434.30

<sup>1</sup> Pounds.

<sup>2</sup> Per pound.

<sup>3</sup> Per foot.

<sup>4</sup> Per coll.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Procured in the past by Office, Chief Signal Officer. *Item name:*  
Rods, surveyors'.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	0.8 per div. per year..	19

160055.

Cost BASIS: Net requirements..... 19  
\$11 each. Total cost of net requirements..... \$209

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

3.33 rods, surveyors', issued per division; 0.8 maintenance per division per year.  
Wastage for United States training approved by Chief Signal Officer.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Unite price of latest order.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## RAW MATERIALS DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Rosin, powdered, in  
cans.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.096 per 1,000 men per year.....	<i>Pounds.</i> 48

Total requirements..... pounds.. 48

Cost BASIS: Net requirements..... pounds.. 48  
\$0.22. Total cost of net requirements..... \$10.56

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 48 pounds rosin as initial supply for Engr. Tr. of 500,000 men. Estimated  
one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****M. AND E. M. DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Ruler, boxwood triangular, 8-inch.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	2.01 per 1,000 men.....	1,005

Cost BASIS:	Net requirements.....	1,005
\$2.27.	Total cost of net requirements.....	\$2,281.35

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

This material is not in stock and is to be purchased to cover initial issue. Maintenance has already been figured on previous sheets.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION:**

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:* Sapinettes.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat divisions, 4 base divisions.	28.85 per division per year.	6,912

Cost BASIS:	Net requirements.....	6,912
\$0.50 each, estimated.	Total cost of net requirements.....	\$346

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

800 sapinettes issued per division. 28.85 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Estimated.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer. Item name:  
Screws, lag, 1/2 by 4 1/2 inch.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	576 per div. per year..	13, 824

Cost BASIS:	Net requirements.....	13, 824
\$2. 95 per H.	Total cost of net requirements.....	\$407. 80

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
960 screws, lag, 1/2 by 4 1/2 inches, issued per div. 576 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
From contract.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

M. AND E. M. DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Scales, Engineer, 40 cm.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	0.32 per 1,000 men.....	160

Cost BASIS:	Net requirements.....	160
\$2. 50.	Total cost of net requirements.....	\$400

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 160 issued as initial supply for Engineer troops with Army of 500,000 men. This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****M. & E. M. DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Scales, plotting, 1/20000 millimeters.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	4.41 per 1,000 men.....	2,205

**COST BASIS:** Net requirements..... 2,205  
**\$0.90.** Total cost of net requirements..... \$1,984.50

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue Tables, Chief of Engineers.

Basis: 2,205 issued as initial supply for Engineer troops with Army of 500,000 men.

This material is not in stock and is to be purchased to cover initial issue.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:* Sets, testing, magneto.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	1.18 per div. per year.	28

1017-E.

**COST BASIS:** Net requirements..... 28  
**\$19.67 each.** Total cost of net requirements..... \$550.76

\*“Working basis” is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

4.91 sets, testing, magneto, issued per division. 1.18 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Unit price of latest order.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.      Item name:  
Sets, testing, tone.

	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	20 combat div., 4 base div.	0.14 per div. per year.	3

Cost BASIS:	Net requirements. . . . .	3
\$74. 80 each.	Total cost of net requirements. . . . .	\$224. 40

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
0.58 sets, testing, tone, issued per div. 0.14 maintenance per div. per year.  
Wastage for United States training approved by Chief Signal Officer.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Average contract price.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Sextants, pocket.

	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	500, 000	0.24 per 1,000 men per year. . . . .	120

Cost BASIS:	Net Requirements. . . . .	120
\$50	Total cost of net requirements. . . . .	\$6, 000

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 600 sextants, as initial equipment for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Shields, tubular.

	Strength.	Working basis.*	Requirements.
			Number.
Maintenance .....	500,000	0.692 per 1,000 men per year .....	346
Total requirements .....			346
Cost Basis:	Net requirements.....		346
\$0.15	Total cost of net requirements .....		\$51.90

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 1 728 shields as initial equipment for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Slide rule, 16-inch, with case.

	Strength.	Working basis.*	Requirements
Maintenance .....	500,000	0.066 per 1,000 men per year.....	33
Total requirements .....			33
Cost Basis:	Net requirements.....		33
\$9.20	Total cost of net requirements .....		\$303.60

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables. Chief of Engineers.  
Basis: 163 slide rules, as initial equipment for Engr. Tr. of 500,000 men. Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Stadial computers.

	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	500, 000	0.038 per 1,000 men per year. . . . .	19

Total requirements. . . . .	19
Cost BASIS:      Net requirements. . . . .	19
\$0.85.            Total cost of net requirements. . . . .	\$16. 15

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 96 stadial computers, as initial equipment for Engr. Tr. of 500,000 men.  
    Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

M. & E. M. DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Stadia, rod, 10-foot, folding.

	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	500	1.41 per 1,000 men. . . . .	705

Cost BASIS:      Net requirements. . . . .	705
\$15.00.            Total cost of net requirements. . . . .	\$10, 575

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue Tables, Chief of Engineers.  
    Basis: 705 issued as initial supply for Engineer troops with Army of 500,000 men.  
    This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Staples.

	Strength.	Working basis.*	Requirements.
			<i>Pounds.</i>
Maintenance. . . . .	500, 000	11.52 per 1,000 men per year. . . . .	5, 760

Total requirements. . . . .	5, 760
Cost Basis:      Net requirements. . . . .	5, 760
\$0.04.      Total cost of net requirements. . . . .	\$230. 40

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables.  
Basis: 5,760 pounds staples as initial supply for Engr. tr. of 500,000 men.  
Estimated one year's supply.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer.      Item name:  
Staples, Blake, insulated, No. 5.

	Strength.	Working basis.*	Requirements.
Maintenance. . . . .	20 combat div.; 4 base div.	629 per div. per year. . . . .	15, 096

Cost Basis:      Net requirements. . . . .	15, 096
\$1.12 per M.      Total cost of net requirements. . . . .	\$16. 91

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
524.12 staples, Blake, insulated, No. 5, issued per div.  
629 maintenance per div. per year.      Wastage for U. S. training approved by Chief Signal Officer.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price on latest order.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Soft steel,  $\frac{1}{4}$ -inch, round, 9-foot bars.

	Strength.	Working basis.*	Requirements.
			<i>Bars.</i>
Maintenance.....	500,000	3.168 per 1,000 men per year.....	1,584
Total requirements.....			bars.. 1,584
Cost BASIS:	Net requirements.....		1,584
\$0.20.	Total cost of net requirements.....		\$316.80

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 1,584 bars soft steel, as initial supply for Engr. tr. of 500,000 men.

Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## M. &amp; E. M. DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Steel arrow (tally pins), 10-inch.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	1.5 per 1,000 men.....	750
Cost BASIS:	Net requirements.....		750
\$0.39.	Total cost of net requirements.....		\$292.50

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 750 issued as initial supply for Engineer troops with Army of 500,000 men.

This material is not in stock and is to be purchased to cover initial issue.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Estimated or recent orders.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**  
**FORM F 1.**  
**FISCAL YEAR 1920.**

**QUARTERMASTER CORPS.**

**MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Soft steel,  $\frac{1}{4}$ -inch. round, 9-foot bars.

	Strength.	Working basis.*	Requirements.
			<i>Bars.</i>
Maintenance.....	500,000	3.168 per 1,000 men per year.....	1,584
Total requirements.....			1,584
Cost BASIS:	Net requirements.....		1,584
\$0.40.	Total cost of net requirements.....		\$633.60

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 1,584 bars soft steel, as initial supply for Engr. tr. of 500,000 men. Estimated one year's supply.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**  
**FORM F 1.**  
**FISCAL YEAR 1920.**

**QUARTERMASTER CORPS.**

**MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Soft steel, 1-inch. round, 9-foot bars.

	Strength.	Working basis.*	Requirements.
			<i>Bars.</i>
Maintenance.....	500,000	3.168 per 1,000 men per year.....	1,584
Total requirements.....			1,584
Cost BASIS:	Net requirements.....		1,584
\$0.72.	Total cost of net requirements.....		\$1,140.46

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 1,584 bars soft steel, as initial supply for Engr. tr. of 500,000 men. Estimated one year's supply.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Soft steel,  $\frac{1}{2}$  by 1 inch, 9-foot bars.

	Strength.	Working basis.*	Requirements.
			<i>Bars.</i>
Maintenance.....	500,000	6.336 per 1,000 men per year.....	3,168
Total requirements.....			3,168
<b>COST BASIS:</b>	Net requirements.....		3,168
\$0.23.	Total cost of net requirements.....		\$728.64

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 3,168 bars soft steel, as initial supply for Engr. tr. of 500,000 men. Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Soft steel,  $\frac{1}{2}$  by 2 inches, 9-foot bars.

	Strength.	Working basis.*	Requirements.
			<i>Bars.</i>
Maintenance.....	500,000	3.168 per 1,000 men per year.....	1,584
Total requirements.....			1,584
<b>COST BASIS:</b>	Net requirements.....		1,584
\$0.34.	Total cost of net requirements.....		\$538.56

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 1,584 bars steel, as initial supply for Engr. tr. of 500,000 men. Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.  
M. & E. M. DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Stereoscope, large.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	0.04 per 1,000 men . . . . .	20
Cost Basis:	Net requirements . . . . .		20
\$3.00.	Total cost or net requirements . . . . .		\$60

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 20 issued as initial supply for Engineer troops with Army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

QUARTERMASTER CORPS.  
MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Soft steel,  $\frac{1}{4}$  by 1 $\frac{1}{2}$  inches, 9-foot bars.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500,000	3.168 per 1,000 men per year . . . . .	Bars. 1,584
Total requirements . . . . .			1,584
Cost Basis:	Net requirements . . . . .		1,584
\$0.60.	Total cost of net requirements . . . . .		\$950.40

\* "Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 1,584 bars soft steel, as initial supply for Engr. tr. of 500,000 men. Estimated one year's supply.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

M. & E. M. DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Stereoscope, hand.

	Strength.	Working basis.*	Requirements.
Maintenance .....	500	0.04 per 1,000 men .....	20

Cost Basis:	Net requirements .....	20
\$0.655.	Total cost of net requirements .....	\$13. 10

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 20 issued as initial supply for Engineer troops with Army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Soft steel,  $\frac{1}{4}$  by 2 inches, 9-foot bars.

	Strength.	Working basis.*	Requirements.
Maintenance .....	500, 000	3.168 per 1,000 men per year.....	<div>Bars.</div> 1, 584

Total requirements .....	1, 584
--------------------------	--------

Cost Basis:	Net requirements .....	1, 584
\$0.69.	Total cost of net requirements .....	\$1, 092. 96

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 1,584 bars soft steel, as initial supply for Engineer troops of 500,000 men.  
Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Soft steel, 1 by 2 inches, 9-foot bars.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	3.168 per 1,000 men per year.....	<i>Bars.</i> 1,584

Total requirements..... 1,584

COST BASIS: Net requirements..... 1,584  
\$1.83. Total cost of net requirements..... \$2,899.72

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 1,584 bars soft steel, as initial equipment for Engr. Tr. of 500,000 men.  
Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION.

Appropriation: Item name: Surgical dressings.

Total cost of net requirements. \$2,191,489.12

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 18.

QUARTERMASTER CORPS.

MEDICAL AND SUPPLIES DIVISION—SURGICAL DRESSINGS.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require-ments.	Cost basis.	Total cost.
Bandages, flannel, 3-inch roller, dozens.....	864 for 25,000.....	17,280	\$4.00	\$69,120.00
Bandages, gauze, compressed, 1 gross in box, gross (3 sizes).	240 for 25,000.....	4,800	11.00	52,800.00
Bandages, gauze, roller, 6 dozen in box, boxes..	7,200 for 25,000.....	144,000	6.00	864,000.00
Bandages, plaster of Paris, 3-inch, dozen.....	6,000 for 25,000.....	120,000	.16	19,200.00
Bandages, rubber, Martin, 1.....	12 for 25,000.....	240	.60	144.00
Bandages, suspensory, dozens.....	360 for 25,000.....	7,200	2.40	17,280.00
Cotton, absorbent, in rolls.....	48,000 for 25,000.....	960,000	.45	432,000.00
Cotton, absorbent, sterilized, 1 ounce, in pack-ages.	6,000 for 25,000.....	120,000	.05	6,000.00
Cotton, bats, pounds.....	16,000 for 25,000.....	200,000	.41	82,000.00
Crinolin (Stenta-Book), 6-yard pieces.....	2,400 for 25,000.....	48,000	.07½	3,720.00
Felt, elastic, ¼ inch thick, yards.....	60 for 25,000.....	1,200	2.75	3,300.00
First-aid packets, metal cases, par. 944, packet..	6,000 for 25,000.....	120,000	.32	38,400.00
First-aid packets, shell wound, par. 944.....	100 for 25,000.....	2,000	.25	500.00
Gauze, plain, sterilized, 2½ yards length, in packages.	1,200 for 25,000.....	24,000	.10	2,400.00
Gauze, sublimated, 2½ yards length, in packages.	1,200 for 25,000.....	24,000	.10	2,400.00
Individual dressing packets, 1.....	300 for 25,000.....	6,000	.25	1,500.00
Pins, safety, 3 sizes, paper.....	12,000 for 25,000.....	240,000	.37	88,800.00
Plaster, adhesive, Z. O., 5 yards by 1 inch, in spools.	48,000 for 25,000.....	960,000	.13	124,800.00
Plaster, adhesive, Z. O., 5 yards by 2½ inches, in spools.	42,000 for 25,000.....	840,000	.25	210,000.00
Plaster of Paris, 4 pounds, in tins.....	480 for 25,000.....	9,600	.22	2,112.00
Splints, arm, abductors.....	0.24 for 25,000.....	5	1.92	9.60
Splints, arm, extension.....	0.24 for 25,000.....	5	.53	2.65
Splints, frame, Balkan, standard, K. D.....	0.24 for 25,000.....	5	8.00	40.00
Splints, Bradford, abduction, frame.....	0.24 for 25,000.....	5	5.12	25.60
Splints, Bradford, frame.....	0.24 for 25,000.....	5	5.98	29.90
Splints, combined, ankle and lower leg.....	0.24 for 25,000.....	5	.62	3.10
Splints, elbow.....	0.24 for 25,000.....	5	.33½	1.67
Splints, gauze, for 1 yard, in roll.....	600 for 25,000.....	12,000	.09	1,080.00
Splints, hand, hyperextension.....	0.24 for 25,000.....	5	1.00	5.00
Splints, Hodgens.....	2 for 25,000.....	40	.86	34.40
Splints, Hodgens, new pattern, 25 cents each, 1.	2 for 25,000.....	40	.82	32.80
Splints, humerus, extension, 1.....	2 for 25,000.....	40	.73	29.20
Splints, knee, Thomas, with toe drop and spanner attachment, 25 cents each.	2 for 25,000.....	40	.75	30.00
Splints, wire, gauze, 15 by 36 inches.....	20 for 25,000.....	400	.245	98.00
Splints, wood, rolls.....	48 for 25,000.....	960	.32	307.20
Sutures, catgut, chromicized, 1 suture in tube..	60,000 for 25,000.....	1,000,000	.065	78,000.00
Sutures, catgut, chromicized, 3 sizes in package	6,000 for 25,000.....	120,000	.18	21,600.00
Sutures, horsehair, 100 in coil.....	600 for 25,000.....	12,000	.06	720.00
Sutures, Kangaroo, tendon, sterilized, 1 suture in tube.	3,000 for 25,000.....	60,000	.06	4,800.00
Sutures, catgut, plain, 3 sizes in package.....	6,000 for 25,000.....	120,000	.18	21,600.00
Sutures, silk, braided, sterilized, 3 sizes in package.	600 for 25,000.....	120,000	.06	7,200.00
Sutures, silk-worm gut, 100 in coil.....	1,800 for 25,000.....	36,000	.95	34,200.00
Sutures, silver wire, in yard lengths.....	300 for 25,000.....	6,000	.13	780.00
Tourniquets and bandages, rubber.....	24 for 25,000.....	480	.80	384.00
Total.....				2,191,489.12

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

### MEDICAL AND HOSPITAL SUPPLIES—SURGICAL INSTRUMENTS.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 14.

## QUARTERMASTER CORPS.

### MEDICAL AND HOSPITAL SUPPLIES DIVISION—SURGICAL INSTRUMENTS.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Abdominal suction tubes.....	0.24 for 25,000.....	5	\$1.75	\$3.75
Accumeter (Bartlett) (Catalogue No. 545).....	6 for 25,000.....	120	2.50	300.00
Aneurism needle.....	2 for 25,000.....	40	.90	36.00
Applicator, nasal (Bosworth) (Catalogue No. 514), 1.	48 for 25,000.....	960	.10	9.60
Applicator, urethral, German silver, flexible triangular end, 8 inches (Catalogue No. 243).	12 for 25,000.....	240	.10	2.40
Applicator, nasal, special. (Catalogue No. 513), 1.	48 for 25,000.....	960	.10	96.00
Applicators, wood, for throat, gross.....	3,750 for 25,000.....	75,000	.03	2,250.00
Atomizers, hand.....	240 for 25,000.....	4,800	.82	3,936.00
Atomizers, Mueller's, sets.....	0.24 for 25,000.....	5	3.00	15.00
Atomizer, paraffin-base (Sherman, Pierce) (Catalogue No. 450).	0.24 for 25,000.....	5	8.00	40.00
Atomizers, set of 4, physicians', in rack (Catalogue No. 548).	0.12 for 25,000.....	2	3.85	7.70
Atomizers, with extra bulb (Sherman), 1.....	2 for 25,000.....	40	.82	32.80
Bags, prostatic (Hagner), rubber, with curved metal staff for introducing bag through urethra into bladder, 3 sizes of each (Catalogue No. 227).	5 for 25,000.....	100	2.55	255.00
Balls, glass, lead free (18, 22, 20 mm.), 12 each....	2.4 for 25,000.....	48	.07	3.36
Bellows, foot, 1.....	2.4 for 25,000.....	48	2.50	168.00
Bistoury, probe, pointed, m. o. straight (Catalogue No. 101).	24 for 25,000.....	480	.55	264.00
Bone, sets, Albee.....	1 for 25,000.....	20	125.00	2,500.00
Bone, operating set, electric Albee, consisting of 1 bone reamer, twine saws, both right-angle and straight, single saws, cross-cut saw, bone drills, foot rheostat, switch, dowel shaper, universal motor with sterilized shell and cards (Catalogue No. 191).	0.24 for 25,000.....	5	124.50	622.50
Bougies, a bouie, brass nickeled, sizes, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, F. of each (Catalogue No. 219).	6 for 25,000.....	1,200	.12	144.00
Bougies, flexible, Nos. 11, 13, 15, 17, 20, 22, French scale.	24 for 25,000.....	2,880	.45	1,296.00
Brace and drill (Hudson).....	0.2 for 25,000.....	4	34.15	136.60
Bronchoscopic battery, Jackson.....	3 for 25,000.....	60	6.75	405.00
Buttons, Murphy, intestinal, anastomosis, sizes, 1, 2, 3, of each (Catalogue No. 303), 1.	36 for 25,000.....	720	.65	468.00
Cannula, callosal puncture, sterling silver, "Frazier" (catalogue No. 1573).	2 for 25,000.....	40	1.00	40.00
Cannula existaxis, Belocque (catalogue No. 531)...	6 for 25,000.....	120	.50	60.00
Cannula, brain exploring, pointed, blunt, (catalogue No. 1572).	2 for 25,000.....	40	.40	16.00
Cannula, infusion, curved (catalogue No. 326).....	12 for 25,000.....	240	.09	21.60
Cannula (Catheter introducer) Cotton-Boothby, 1.	2.4 for 25,000.....	48	1.00	48.00
Cases, aspirating (par. 910).....	2 for 25,000.....	40	9.00	360.00
Case, brain, plastic and oral.....	1 for 25,000.....	20	233.00	4,660.00
Cases, emergency (par. 913).....	6 for 25,000.....	120	3.65	438.00
Case, eye, auxiliary.....	1 for 25,000.....	20	87.25	1,745.00
Cases, eyes (par. 914).....	1 for 25,000.....	20	190.00	3,800.00
Cases, ear, nose, throat (par. 912).....	1 for 25,000.....	20	147.68	2,953.60
Cases, forceps, hemostatic (par. 915).....	12 for 25,000.....	240	14.40	3,456.00
Cases, general operating (par. 916).....	1 for 25,000.....	20	166.50	3,330.00
Cases, genitourinary (par. 917).....	1 for 25,000.....	20	56.50	1,130.00
Cases, instruments, medical officers (par. 919).....	24 for 25,000.....	480	8.25	3,960.00



## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—SURGICAL INSTRUMENTS—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Cases, linen or canvas, for enlisted men (feet) (par. 907).	12 for 25,000.....	240	\$0.12	\$28.80
Cases, medicine, medical officers (par. 92).....	6 for 25,000.....	120	1.87	224.40
Cases, operating, small (par. 922).....	5 for 25,000.....	100	56.50	5,650.00
Cases, pocket (par. 923).....	12 for 25,000.....	240	11.40	2,736.00
Cases, postmortem (par. 924).....	2 for 25,000.....	40	38.70	1,548.00
Cases, tooth extracting, 3 forceps in canvass roll..	1 for 25,000.....	20	7.80	156.00
Case, treatment.....	24 for 25,000.....	5	13.50	67.50
Case, trial lenses (par. 926).....	1 for 25,000.....	20	103.50	2,070.00
Catheter, brass, nickled, Van Buren, curved, size 16 F (catalogue No. 215), 1.	24 for 25,000.....	480	.25	120.00
Catheters, cylindrical, 18 Fr (Peerge's), 1.....	12 for 25,000.....	240	.50	120.00
Catheter, Eustachian, virgin silver, sizes, 1, 2, 3, of each (catalogue No. 536), 1.	12 for 25,000.....	240	.40	96.00
Catheters, Flexible, assorted, Nos. 15, 17, 18, 20, 22, 24 French seal, 1.	120 for 25,000.....	14,400	.06	864.00
Catheter, male, double current, silver, size 16 F (catalogue No. 215), 1.	2.4 for 25,000.....	48	1.75	84.00
Catheters, posterior urethral, silver, to fit standard Luer syringe (catalogue No. 229).	3 for 25,000.....	60	.35	21.00
Catheter, urethral (Carcean), whistle tips, size 9 F (catalogue No. 209), 1.	24 for 25,000.....	480	1.90	912.00
Catheters, urethral, conical end, one eye, size 6 F (catalogue No. 208), 1.	60 for 25,000.....	1,200	2.00	2,400.00
Catheters, urethral, cylindrical, 12, 14, 16, 18, 20, and 22 F of each (catalogue No. 210.1), 1.	120 for 25,000.....	14,400	.55	7,920.00
Catheters, urethral gum linen coude collapsible, sizes 14, 16, 18, 20, 26 F of each, 1.	120 for 25,000.....	12,000	.50	6,000.00
Catheters, urethral, (Nelaton) rubber, hollow tips, sizes 14, 16, 18, 22 and 26 F of each (catalogue No. 212).	100 for 25,000.....	10,000	.08	800.00
Catheters, urethral, plain, whistle tips, one eye, sizes 5, 6, 7, F of each (catalogue No. 206), 1.	100 for 25,000.....	6,000	2.25	13,500.00
Catheters, urethral, rubber, self retaining (Pozzer) size 20 F (catalogue No. 211), 1.	120 for 25,000.....	2,400	1.25	3,000.00
Catheters, urethral X-ray, sizes 5, 6, 7 F, of each (catalogue No. 207).	1.2 for 25,000.....	72	1.90	136.80
Cautery, Pacquelin, with 2 platinum points (catalogue No. 305), 1.	2 for 25,000.....	40	20.00	800.00
Chisel, bone, square handle, three sizes 6, 12, and 18 MN (catalogue No. 183).	9.0 for 25,000.....	540	1.00	540.00
Chisel, mastoid (Schwartz), sizes 1 and 2 of each (catalogue No. 507).	6 for 25,000.....	240	1.00	240.00
Chisel, submucous, nasal (Frear), (catalogue No. 505).	12 for 25,000.....	240	.675	162.00
Clamp for bone plating (Lowman), (catalogue No. 195), 1.	3 for 25,000.....	60	4.00	240.00
Clamps for bone plating, small (Lowman), 1.....	24 for 25,000.....	5	4.00	20.00
Clamp, hemorrhoidal (catalogue No. 242.1), 1.....	3 for 25,000.....	60	2.75	165.00
Clip, Michels, wound, small, Med. large of each (catalogue No. 148-1), 1	200 for 25,000.....	4,000	.003	12.00
Clippers, hair, 1.....	2 for 5,000.....	40	2.16	86.40
Catheters, grooved and tunneled (Gouley), size 14 F (catalogue No. 214).	2.4 for 25,000.....	48	.50	24.00
Clipper, hair B. & S., No. 1 (catalogue No. 115.1)...	1.2 for 25,000.....	34	2.25	54.00
Codm suction apparatus, Mueller, 110 volts, 1....	2.4 for 25,000.....	48	15.00	720.00
Condensers, Oakley, 110 volts, 1.....	2.4 for 25,000.....	48	15.00	748.80
Cornell, Loupes (Berger).....	3 for 25,000.....	60	4.25	255.00
Coupler or adapter, for connecting urethral catheters with Luer syringe (catalogue No. 213).	60 for 25,000.....	1,200	.04	48.00
Cranial, operating set, brace with burr 1 cm. and drill 1 cm. (catalogue No. 169), 1.	1.2 for 25,000.....	24	6.00	144.00
Curette, adenoid (Barnhill), sizes 1, 3, 4 of each (catalogue No. 515).	36 for 25,000.....	720	1.50	1,080.00
Curette, bone (Whiting), sizes 2, 4, 6 of each (catalogue No. 188).	90 for 25,000.....	1,800	4.80	8,640.00
Curette, Cgalasim (Meyerhefer), medium size (catalogue No. 561).	3 for 25,000.....	60	1.05	63.00
Curette, mastoid (Buck), sizes 1 and 3 of each (catalogue No. 506).	12 for 25,000.....	240	1.60	384.00
Crystotome (Craefel) (catalogue No. 562).....	3 for 25,000.....	60	1.25	75.00
Cystoscopes.....	3 for 25,000.....	60	65.00	3,900.00
Cystoscopes, Brown, Buerger (catalogue No. 2231).	3 for 25,000.....	60	105.25	6,375.00
Cystoscope (Breach), with pair of cords and 2 extra lamps (catalogue No. 224).	3 for 25,000.....	60	27.10	1,626.00
Dorings outfit, 1.....	0.24 for 25,000.....	5	56.00	280.00
Dilator, jaw (Blair) (catalogue No. 3112), 1.....	0.24 for 25,000.....	5	3.00	15.00
Dilator, lachrymal (catalogue No. 5931).....	6 for 25,000.....	120	.35	42.00
Dilator, trachea (Noch), 1.....	0.24 for 25,000.....	5	3.00	15.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—SURGICAL INSTRUMENTS—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Dilator, with filaform guide (Le Fort), 1, sizes 11, 13, 15, 18, 22, 26 F of each (catalogue No. 216).	14 for 25,000.....	280	\$0.65	\$182.00
Director, perineal (wheelhouse staff), (catalogue No. 246), 1.	12 for 25,000.....	240	1.70	408.00
Director, probe pointed (Arnott), silver, 5-inch (catalogue No. 158.1).	12 for 25,000.....	240	.75	180.00
Dissector, blunt.....	0.24 for 25,000.....	5	1.25	6.25
Dissector, periosteome, blunt (Kocher), (catalogue).	3 for 25,000.....	60	1.10	66.00
Drill, bone, detachable, metal handle with square socket drills $4\frac{1}{4}$ inches long, of best drill red steel, $\frac{1}{4}$ inch in diameter at handle, 3 points $\frac{1}{4}$ , $\frac{1}{4}$ , $\frac{1}{4}$ inch (catalogue No. 190).	3 for 25,000.....	60	2.10	126.00
Drill, bone (Stille-Sherman), 3 points all No. 32 drill gauge (catalogue No. 189).	0.30 for 25,000.....	6	6.00	36.00
Drills, reinforced, set of 3, all No. 32 drill gauge, 2 total length 3 inches, and 1 total length 4 inches (catalogue No. 189.1).	9 for 25,000.....	180	2.25	405.00
Drum, testing, hard rubber (catalogue No. 602) ..	0.24 for 25,000.....	5	.40	2.00
Elevator, dura.....	12 for 25,000.....	240	.38	91.20
Elevators, Knott's type, right and left, metal handle for each.	6 for 25,000.....	120	1.54	184.80
Elevators, periosteum (Sayre), double-ended (catalogue No. 186).	30 for 25,000.....	600	.75	450.00
Elevator, submucous (Freer), dull-edged (catalogue No. 501).	2 for 25,000.....	40	.675	27.00
Elevator, submucous (Freer), sharp-edged (catalogue No. 502).	2 for 25,000.....	40	.70	28.00
Evacuator (Chismore), with 2 catheters (catalogue No. 232).	6 for 25,000.....	120	12.00	1,440.00
Eye, spud and needle, reversible, in metal case...	2.4 for 25,000.....	48	.65	31.20
Filiforms, whalebone, straight thin, delicate (catalogue No. 223).	24 for 25,000.....	480	.07	33.60
Filiforms, gum linen, with standard screw fittings (standard screw thread is 1 by 56) for both Le Fort dilators and Malsomneuve urethratome and catheter, of each, 1.	30 for 25,000.....	1,200	1.50	1,800.00
Finger cots, thin rubber (catalogue No. 304), 1....	1,200 for 25,000.....	24,000	.01	240.00
Forceps, advancement (Prince), (catalogue No. 581.1), 1.	6 for 25,000.....	120	2.75	330.00
Forceps, advancement (Reece), (catalogue No. 581), 1.	6 for 25,000.....	120	3.00	360.00
Forceps, artery, 1.....	24 for 25,000.....	480	.95	456.00
Forceps, artery, $6\frac{1}{4}$ inches.....	6 for 25,000.....	120	1.25	150.00
Forceps, bone Rongeur (De Bilbiss).....	2.4 for 25,000.....	48	4.30	206.40
Forceps, bone-cutting (Liston), curved screw lock, $7\frac{1}{4}$ -inch (catalogue No. 173), 1.	18 for 25,000.....	360	2.50	900.00
Forceps, bone-cutting (Liston), very heavy Army pattern, straight, 10-inch (catalogue No. 174).	24 for 25,000.....	80	4.00	320.00
Forceps, bone-holding (Faraboeuf), French lock (catalogue No. 181), 1.	12 for 25,000.....	240	4.75	1,140.00
Forceps, bone-holding (Faraboeuf-Lambotte), French lock, ratchet catch, 10-inch (catalogue No. 181.1), 1.	6 for 25,000.....	120	4.75	570.00
Forceps, bone-cutting (Liston), straight screw lock, $7\frac{1}{4}$ -inch (catalogue No. 174), 1.	18 for 25,000.....	360	2.00	720.00
Forceps, bone-cutting (Liston), straight screw lock, $8\frac{1}{4}$ -inch (catalogue No. 174.1), 1.	18 for 25,000.....	360	3.00	1,080.00
Forceps, bone cutting (Liston), curved, screw lock, $8\frac{1}{4}$ -inch (catalogue No. 173.1), 1.	18 for 25,000.....	360	2.75	990.00
Forceps, bullet (Sann), 8-inch, screw lock (catalogue No. 135).	24 for 25,000.....	480	1.75	840.00
Forceps, capsule (catalogue No. 581.2), 1.....	6 for 25,000.....	120	1.50	180.00
Forceps, chalasion (Lambert) (catalogue No. 582), 1.	6 for 25,000.....	120	1.65	198.00
Forceps, cilia, plain (catalogue No. 583), 1.....	6 for 25,000.....	120	.40	48.00
Forceps, dressing, spring, 12-inch.....	12 for 25,000.....	240	1.40	336.00
Forceps, dressing, 6-inch, medium, 1.....	2.4 for 25,000.....	48	.50	24.00
Forceps, dressing, spring, $5\frac{1}{2}$ -inch (catalogue No. 130), 1.	144 for 25,000.....	2,880	.50	1,440.00
Forceps, dressing, straight, 10-inch with catch screw lock, (catalogue No. 128).	24 for 25,000.....	480	1.55	744.00
Forceps, dressing, straight, 10-inch, without catch, screw lock (catalogue No. 128).	6 for 25,000.....	120	1.55	186.00
Forceps, ear (Wilde), angular (catalogue No. 535), 1.	6 for 25,000.....	120	.50	60.00
Forceps, eutropium (Des Marres) (catalogue No. 584), 1.	6 for 25,000.....	120	1.50	180.00
Forceps, eutropium, left (catalogue No. 584.2), 1.	6 for 25,000.....	120	1.65	198.00
Forceps, eutropium, right (catalogue No. 584.1), 1.	6 for 25,000.....	120	1.65	198.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—SURGICAL INSTRUMENTS—continued

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Forceps, hemostatic (Halstead, mosquito), straight, 5-inch, screw lock (catalogue No. 117.1)	60 for 25,000.....	1,200	\$1.35	\$1,630.00
Forceps, hemostatic (Halstead, Army), straight, 5½-inch (catalogue No. 117), screw lock.	60 for 25,000.....	1,200	.90	1,080.00
Forceps, hemostatic, Jones, straight, 5-inch, screw lock (catalogue No. 116).	240 for 25,000.....	4,800	.85	4,080.00
Forceps, hemostatic (Kelly-Hopkins), straight and flat shand, 6-inch, screw lock (catalogue No. 114).	240 for 25,000.....	4,800	1.00	4,800.00
Forceps, hemostatic (Kelly-Pean), curved, flat shand, 6½-inch, screw lock (catalogue No. 119).	10 for 25,000.....	200	1.25	250.00
Forceps, hemostatic (Kocher), straight, 5½-inch, screw lock (catalogue No. 120).	60 for 25,000.....	1,200	1.25	1,500.00
Forceps, hemostatic (Oclumer), heavy, straight, 7½-inch, screw lock (catalogue No. 121).	20 for 25,000.....	400	1.50	600.00
Forceps, hemostatic (Pean), curved, 8½-inch, screw lock (catalogue No. 123).	12 for 25,000.....	240	2.75	660.00
Forceps, hemostatic (Pean), straight, 8½-inch, screw lock (catalogue No. 122).	12 for 25,000.....	240	2.50	600.00
Forceps, intestinal (Dover), curved, 9-inch, screw lock (catalogue No. 125).	12 for 25,000.....	240	3.50	840.00
Forceps, intestinal (Dover), straight, 9-inch, screw lock (catalogue No. 124).	12 for 25,000.....	240	3.00	720.00
Forceps, kidney, long, curved, screw lock (catalogue No. 232).	6 for 25,000.....	120	5.75	690.00
Forceps (Lane), screw holding (catalogue No. 104.1), 1.	3 for 25,000.....	60	2.00	120.00
Forceps, larvngal.....	0.24 for 25,000.....	5	2.25	11.25
Forceps, lithotomy, curved, screw lock (catalogue No. 240).	6 for 25,000.....	120	3.00	360.00
Forceps, lithotomy, straight screw lock (catalogue No. 239).	6 for 25,000.....	120	3.50	420.00
Forceps, Michel, suture (catalogue No. 1482).....	20 for 25,000.....	400	1.35	540.00
Forceps, nasal (Knight), angular screw lock, with bolster joint (catalogue No. 526).	12 for 25,000.....	240	2.25	540.00
Forceps, oesophageal, spiral.....	4 for 25,000.....	80	4.00	320.00
Forceps, prostatic, labs, small, screw lock (Young), (catalogue No. 237).	12 for 25,000.....	240	5.75	1,380.00
Forceps, Rongeur, bone (Barnes), screw lock (catalogue No. 176).	12 for 25,000.....	240	3.50	840.00
Forceps, Rongeur, bone, carnal (Devilbiss) (catalogue No. 171).	30 for 25,000.....	600	4.30	2,580.00
Forceps, Rongeur, bone (Horsley), screw lock, 8½-inch (catalogue No. 175).	18 for 25,000.....	360	3.25	1,170.00
Forceps, Rongeur, bone, small United States Army pattern, 5½-inch, screw lock (catalogue No. 176.1).	30 for 25,000.....	600	3.50	2,100.00
Forceps, Rongeur, bone, very heavy, Army pattern, curved (catalogue No. 165.1).	18 for 25,000.....	360	5.00	1,800.00
Forceps, septum, compression (Aseh), screw lock (catalogue No. 525).	12 for 25,000.....	240	2.25	540.00
Forceps, septum (Hanson-Middleton, modified), both jaws cupped and to meet but not to carry through (catalogue No. 523).	12 for 25,000.....	240	12.00	2,880.00
Forceps, sequentrum, screw lock (catalogue No. 177), 1.	12 for 25,000.....	240	2.50	600.00
Forceps, spreading, for removing Michel clips (catalogue No. 148.3), 1.	12 for 25,000.....	240	1.35	324.00
Forceps, tissue (Allis), 4 by 5 tooth, screw lock, (catalogue No. 127).	3 for 25,000.....	60	1.50	90.00
Forceps, tissue, spring mouse toothed, 1 by 2, 5 inches (catalogue No. 131.1), extra heavy.	60 for 25,000.....	1,200	6.75	810.00
Forceps, tissue, spring, mouse toothed, 1 by 2, 5½ inches (catalogue No. 131).	130 for 25,000.....	2,400	.60	144.00
Forceps, tissue, 2 teeth, 4½ inches.....	2.4 for 25,000.....	48	1.20	57.60
Forceps, tissue, 10 inches.....	10 for 25,000.....	200	1.50	300.00
Forceps, tongue-holding (Mathieu) (catalogue No. 526.1).	12 for 25,000.....	240	2.00	480.00
Forceps, tonsil-seizing, with 1 open ring (catalogue No. 517).	12 for 25,000.....	240	2.50	600.00
Forceps, towel (Backhaus), 3 inches, screw lock (catalogue No. 134.1).	240 for 25,000.....	4,800	.80	3,840.00
Forceps, trachoma (Knapp) (catalogue No. 587.1).	6 for 25,000.....	120	1.15	138.00
Forceps, trachoma (Prince) (catalogue No. 588).....	6 for 25,000.....	120	1.15	138.00
Forceps, trachoma (Noyes), 1 up and 1 down (catalogue No. 587).	6 for 25,000.....	120	1.00	120.00
Forceps, towel (Backhaus), 5½ inches, screw lock (catalogue No. 134).	12 for 25,000.....	240	1.50	360.00
Forceps, urethral, rongeur (Ferguson), long, screw lock (catalogue No. 242).	6 for 25,000.....	120	6.50	780.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—SURGICAL INSTRUMENTS—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Forceps, urethral, straight, screw lock (catalogue No. 237.1).	12 for 25,000.....	240	\$2.40	\$576.00
Forceps, urethral, tumor (Thompson), curved, screw lock (catalogue No. 241).	6 for 25,000.....	120	6.25	750.00
Forceps (Vulselleum).....	2.4 for 25,000.....	48	1.75	84.00
Gauge, mouth (Denhart) (catalogue No. 311), 1....	24 for 25,000.....	5	2.10	10.50
Gauge, mouth (Murdock) (catalogue No. 311.1), 1..	12 for 25,000.....	240	1.75	420.00
Gloves, opaque, protective gantlet (1517), pairs...	2 for 25,000.....	40	5.00	200.00
Gouge, bone, square handle, 3 sizes, 6, 10, and 14 MM (sets) (catalogue No. 184).	5 for 25,000.....	100	1.35	135.00
Gouge, mastoid (Schwartz), sizes 1 and w of each (catalogue No. 508).	12 for 25,000.....	240	.50	120.00
Gouge, V-shaped, pointed (catalogue No. 563), 1..	2 for 25,000.....	40	.90	36.00
Grooved director, 5½ inches long, 1.....	4 for 25,000.....	80	.07	5.60
Head lamps, complete (Murphy).....	2.4 for 25,000.....	48	3.50	168.00
Headlight, electric, Murphy, and adjustable head band for 110 with socket attachment and conducting cords, disconnecting fittings in cord.	2 for 25,000.....	40	3.50	140.00
Headlight, electric, extra batteries for (catalogue No. 3122).	6 for 25,000.....	120	.83	99.60
Headlight, electric, extra lamps for (catalogue No. 3123).	6 for 25,000.....	120	.50	60.00
Headlight, electric, metal band, with dry-cell battery (catalogue No. 312).	12 for 25,000.....	240	7.35	1,764.00
Headlight, 6 extra lamps, 110 volts.....	24 for 25,000.....	5	5.00	25.00
Hemostat, pean, 10 inches, curved (Lentz 892).. (A1980).	12 for 25,000.....	240	1.75	420.00
Hemostat, tonsil (catalogue No. 518).....	12 for 25,000.....	240	2.50	600.00
Holder, needle (Hager), 7 inches, screw lock (catalogue No. 133).	3.6 for 25,000.....	72	1.50	108.00
Holder, needle (Horton) (catalogue No. 5891)....	6 for 25,000.....	120	2.50	300.00
Holder, needle (Richter), 7 inches, screw lock (catalogue No. 132).	6 for 25,000.....	120	2.75	330.00
Holder, needle (Stevens) (catalogue No. 589)....	6 for 25,000.....	120	2.20	264.00
Hook, dura (catalogue No. 1873).....	12 for 25,000.....	240	.70	168.00
Inhaler, gas-ether, 1.....	24 for 25,000.....	5	40.50	202.50
Irrigation, apparatus tubing clip for (catalogue No. 250), 1.	30 for 25,000.....	600	.035	21.00
Irrigators (New York), eye and ear pattern.....	2.4 for 25,000.....	48	.35	16.80
Irrigator, urethral, nozzle for (catalogue No. 249) .	10 for 25,000.....	200	.17	34.00
Intubation set (O'Dwyer) (catalogue No. 310), 1..	0.24 for 25,000.....	5	30.00	150.00
Knife, amputating, 6-inch blade (catalogue No. 105), 1.	2 for 25,000.....	40	2.00	80.00
Knife, canaliculus (Bowman), flexible shank (catalogue No. 569).	2 for 25,000.....	40	1.30	52.00
Knife, cataract (Graefe), assorted sizes (catalogue No. 567).	2 for 25,000.....	40	1.25	50.00
Knife (Bears) (catalogue No. 565.2).....	2 for 25,000.....	40	1.10	44.00
Knife, fistula (Koch), 6-inch.....	14.4 for 25,000.....	288	2.00	576.00
Knife, needle (Knapp), medium size (catalogue No. 566).	2 for 25,000.....	40	1.30	52.00
Knife, needle (Have-Ziegler) (catalogue No. 587.1), 1.	2 for 25,000.....	40	1.25	50.00
Knife, operating, M. C., 2-inch blade (catalogue No. 103).	48 for 25,000.....	960	.60	576.00
Knife, plaster, wooden handle, riveted (catalogue No. 107).	12 for 25,000.....	240	.11	26.40
Knife, scalpel type, medium size (catalogue No. 568), 1.	2 for 25,000.....	40	1.10	44.00
Knife, submucous (Freer), flat, round blade (catalogue No. 503).	12 for 25,000.....	240	.95	228.00
Knife, turbinate (Ballenger), right and left of each (catalogue No. 509), 1.	12 for 25,000.....	240	1.75	420.00
Knives (Mueller), 1.....	24 for 25,000.....	480	.50	240.00
Keratome (Jaeger), angular, medium size (catalogue No. 565).	2 for 25,000.....	40	1.50	60.00
Keratome, straight (catalogue No. 565.1) 1.....	2 for 25,000.....	40	1.30	52.00
Knife, submucous (Freer), half round, straight (catalogue No. 504).	12 for 25,000.....	240	.95	228.00
Knife, swivel (Ballinger), small size (catalogue No. 510), 1.	12 for 25,000.....	240	2.00	480.00
Lamps, condensing, 110 volts, 1.....	0.24 for 25,000.....	5	30.00	150.00
Lens, condensing, 2-inch, broad hard-rubber ring (catalogue No. 595).	0.6 for 25,000.....	12	.90	10.80
Lens, spoon, metal (Davial) (catalogue No. 574)..	2.4 for 25,000.....	48	.90	43.20
Lens, spoon, wire loop (catalogue No. 572).....	2.4 for 25,000.....	48	.90	43.20
Lens, spoon, metal (Eraefe) (catalogue No. 573)..	2.4 for 25,000.....	48	.90	43.20
Lithotomy, gortet (Teale) (catalogue No. 235)...	1.2 for 25,000.....	24	.95	22.80
Lithotrite (Bigelow) (catalogue No. 231).....	6 for 25,000.....	120	43.20	5,184.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES—SURGICAL INSTRUMENTS DIVISION—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Magnets (Lancaster model), 110 volts.....	1-02-25,000.....	2	\$150.00	\$300.00
Mallet, hardwood, with seamless metal rings 1/2 inch wide, diameter of face of head 1 1/2 inches, handle 7 inches long (catalogue No. 179).	.30 for 25,000.....	6	1.00	6.00
Mallet, wood (catalogue No. 2353).....	1.2 for 25,000.....	24	.74	17.76
Mash, metal, Yankhauer (catalogue No. 455).....	2.4 for 25,000.....	48	1.00	52.80
Mastoid, Rongeur, 1.....	2.4 for 25,000.....	48	3.75	180.00
Mirrors, post nasal, 1.....	2.4 for 25,000.....	48	2.00	96.00
Needle, aneurism (Deschamps), Salunt, point right (catalogue No. 154).	6 for 25,000.....	120	.90	108.00
Needles, full curved, plain eye, cutting edge (cat- alogue No. 600).	14 for 25,000.....	280	.05	14.00
Needles, Hagedorn, straight, No. 9, dozen.....	12 for 25,000.....	240	.60	144.00
Needles, half curved, plain eye, cutting edge (catalogue No. 601).	14 for 25,000.....	280	.05	14.00
Needle, infusion, 3 1/2-inch (catalogue No. 325) 1....	120 for 25,000.....	2,400	.07	168.00
Needles, lumbar puncture, steel, to fit standard Luer syringe (catalogue No. 302).	360 for 25,000.....	7,200	.48	3,456.00
Needles, paracentesis (catalogue No. 570), 1.....	2 for 25,000.....	40	.90	36.00
Needles, Reverdin.....	120 for 25,000.....	2,400	2.65	6,360.00
Needles, surgical, assorted, dozen.....	1,200 for 25,000.....	24,000	.625	15,000.00
Needles, Trocar point, Mays.....	60 for 25,000.....	1,200	.07	84.00
Needles, surgical, Hagedorn, 20 in set.....	12 for 25,000.....	240	1.00	240.00
Nippers, wire, 5-inch.....	2 for 25,000.....	40	1.00	40.00
Ophthalmoscope, 1.....	2 for 25,000.....	40	16.00	640.00
Ophthalmoscope and retinoscope, electric, with box (De Zang).	.24 for 25,000.....	5	25.00	125.00
Oral screw, hard rubber (catalogue No. 314), 1....	1.2 for 25,000.....	24	.15	3.60
Osteons, square handle, 3 sizes, 6, 12, and 18 mm. (catalogue No. 185).	190 for 25,000.....	54	1.00	54.00
Perimeter, hand (Schweigger), with charts (12), 1.	2 for 25,000.....	40	12.00	480.00
Periosteotome, broad (catalogue No. 186.1).....	3 for 25,000.....	60	.95	57.00
Periosteotome, narrow (catalogue No. 186.2), 1....	3 for 25,000.....	60	.90	54.00
Periosteotome, plain (catalogue No. 187.1).....	3 for 25,000.....	50	1.25	62.50
Pelvic support, Myerling (catalogue No. 235.2), 1.	1.2 for 25,000.....	24	8.00	192.00
Pins, transfixion (Wyeth), 8 and 12 inches, of highest grade drill rod steel, 1 of each (catalogue No. 155), 1.	100 for 25,000.....	2,000	.20	400.00
Plates, bone (Sherman), vanadium steel, sizes 0, 1, 3, 4, 5, 6 1/2, 7, 8, 11, 13 (catalogue No. 192).	30 for 25,000.....	600	.56	336.00
Politzer, bag (catalogue No. 530).....	2.4 for 25,000.....	48	.32	15.36
Probes, copper, 1.....	24 for 25,000.....	480	.10	48.00
Probe, pliable copper, unplated, 8 by 1/4-inch (catalogue No. 1562).	3 for 25,000.....	60	.10	6.00
Probe, straight, with eye, 5-inch, silver, or plated (catalogue No. 156).	3 for 25,000.....	60	.05	3.00
Probe, straight, with eye, 8-inch, silver, or plated (catalogue No. 1561).	3 for 25,000.....	60	.05	3.00
Probe, silver, salivary duct, delicate, 4 1/2-inch (catalogue No. 1563).	6 for 25,000.....	120	.10	12.00
Probe, urethral (Kelly), German silver (cata- logue No. 248).	12 for 25,000.....	240	.20	48.00
Proctoscope (Kelly), diameter 22 mm., length 20 c. m. (catalogue No. 249).	2 for 25,000.....	40	1.65	66.00
Pump, water (Boekel), slip attachment, total length 8 inches (catalogue No. 322), 1.	2 for 25,000.....	40	1.35	54.00
Racks, instrument.....	.24 for 25,000.....	5	1.35	6.75
Rack, instrument, Mayo.....	2 for 25,000.....	40	9.00	360.00
Razor, 1.....	48 for 25,000.....	960	.52	499.20
Razor, skin grafting, 1.....	2 for 25,000.....	40	2.60	104.00
Repositor, iris, metal (catalogue No. 571), 1.....	2 for 25,000.....	40	.25	10.00
Retractors.....	3 for 25,000.....	60	1.50	90.00
Retractors, Army type, two sizes, nested 9 by 10 inches (catalogue No. 150).	3 for 25,000.....	60	.75	45.00
Retractors (catalogue No. 592).....	2 for 25,000.....	40	.25	10.00
Retractors, Caminectomy, Fraziers (catalogue No. 152.1), 1.	2 for 25,000.....	40	6.25	250.00
Retractors, deep 7 1/2-inch width, 2-inch hook, pairs.	0.24 for 25,000.....	5	1.50	7.50
Retractors, decompression (catalogue No. 151.1), 1.	3 for 25,000.....	60	1.60	96.00
Retractors, double ended, combination of Rich- ardson & Eastman; 2 sizes, blades 3/4 by 2 inches and 2 by 2 1/4 (catalogue No. 149).	2 for 25,000.....	40	2.50	100.00
Retractor, electrically lighted, Chevalier Jackson- Johnson (catalogue No. 546), 1.	2 for 25,000.....	40	14.00	560.00
Retractor, urethral, long (Young) (catalogue No. 236), 1.	12 for 25,000.....	240	3.00	720.00
Retractor, trachea, 3 prongs (catalogue No. 5401), 1.	6 for 25,000.....	120	1.35	162.00
Retractor, trachea, 1 prong (catalogue No. 5402), 1.	6 for 25,000.....	120	.80	96.00
Retractor, solid blade, 2-inch set.....	2 for 25,000.....	40	.80	32.00



## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES—SURGICAL INSTRUMENTS DIVISION—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Retractor, sharp prong, 8-inch, very heavy (catalogue No. 151.2).	2 for 25,000.....	40	\$1.10	\$44.00
Retractor, self-retaining, abdominal (Balfour) (catalogue No. 153).	20 for 25,000.....	400	3.50	2,200.00
Retractor, prostatic (Young), bifurcated, large, hollow handle, steel blade (catalogue No. 233).	6 for 25,000.....	120	3.15	378.00
Retractor, prostatic (Young), bifurcated, small, hollow, handle, steel blade (catalogue No. 234.)	6 for 25,000.....	120	2.85	342.00
Retractor, mastoid (all port) (catalogue No. 152).	20 for 25,000.....	400	2.00	800.00
Retractor, mastoid, Jansen.....	2 for 25,000.....	40	2.10	84.00
Retractor, Mason-Judd (catalogue No. 235.1).....	6 for 25,000.....	120	5.75	690.00
Retractors, lid (Desmarres) (catalogue No. 592), 1.	6 for 25,000.....	120	.85	102.00
Retractor, Halsted, vein (catalogue No. 152.2), 1.	2 for 25,000.....	40	1.65	66.00
Retractor, 4-prong, shape, steel (catalogue No. 151), 1.	1 for 25,000.....	20	1.50	30.00
Retractor, flexible, copper, silver plated (catalogue No. 150.1).	2 for 25,000.....	40	.75	30.00
Rheostat, extra pair of chords for (catalogue No. 226.1).	24 for 25,000.....	480	1.25	600.00
Rheostat, E. S. J., or Wappler lamp socket type (catalogue No. 226).	6 for 25,000.....	120	4.00	480.00
Saw, metacarpal, 8½ inches long (catalogue No. 136.2).	1 for 25,000.....	20	1.75	35.00
Saw, Hey's long 8-inch, blade 1½ C., 2 inches (catalogue No. 136).	1.2 for 25,000.....	24	1.00	24.00
Saw, Gigli handles for (catalogue No. 139).....	2 for 25,000.....	40	.20	8.00
Saw, Gigli 12, 20, 30 inch, made from best square steel of each (catalogue No. 138).	12 for 25,000.....	720	.20	144.00
Saws, Gigli, guide for (Blair) (catalogue No. 138) ..	1.2 for 25,000.....	24	1.25	30.00
Saw frame, coping, plain without saws, for use with Gigli saws (catalogue No. 137).	1 for 25,000.....	20	.235	4.70
Saw, amputating (Satterlee) (catalogue No. 136) ..	0.7 for 25,000.....	14	1.35	18.90
Separatoo, tonsil, spittal model (catalogue No. 516)	1.2 for 25,000.....	24	1.10	26.40
Searchers, stone, flat end (Thompson) (catalogue No. 244).	1.2 for 25,000.....	24	.60	14.40
Screws, oral.....	2.4 for 25,000.....	48	.15	7.20
Screw driver (Lane), best steel solid handle 10 inches (catalogue No. 193.1).	1 for 25,000.....	20	.75	15.00
Screw driver (Sherman) (catalogue No. 193).....	1 for 25,000.....	20	1.50	30.00
Screw, bone (Sherman), sizes ¼, ½, ¾ inch for ¼-inch drill of each (catalogue No. 194).	360 for 25,000.....	7,200	.025	180.00
Scoop, gall bladder (Mayo-Robson) (catalogue No. 245).	12 for 25,000.....	240	.85	204.00
Scissors, uterine, curved 8-inch, screw lock (catalogue No. 114)	12 for 25,000.....	240	1.10	264.00
Scissors, straight, double sharp, 5½-inch, screw lock (catalogue No. 112).	30 for 25,000.....	600	.65	390.00
Scissors, straight, double blunt, 8-inch heavy, screw lock (catalogue No. 110.2).	12 for 25,000.....	240	.85	204.00
Scissors, straight, double blunt, 6½-inch, screw lock, heavy (catalogue No. 110.1).	30 for 25,000.....	600	.75	450.00
Scissors, straight, blunt, 5½-inch, screw lock (catalogue No. 110).	30 for 25,000.....	600	.65	390.00
Scissors, heavy, 6-inch.....	12 for 25,000.....	240	.90	216.00
Scissors, dissecting (Mayo), straight, 5½-inch, screw lock (catalogue No. 109).	48 for 25,000.....	960	1.00	960.00
Scissors, bandage, 7½-inch, screw lock (catalogue No. 115).	60 for 25,000.....	1,200	1.00	1,200.00
Scalpels, aseptic, 2 handles with 12 of each of 2 sizes, separable blades in khaki case (catalogue No. 475).	12 for 25,000.....	480	3.20	1,536.00
Scalpels, ½-inch blade.....	48 for 25,000.....	960	.60	576.00
Scissors (par. 932).....	60 for 25,000.....	1,200	.20	240.00
Shears, Paster, Paris (Stille) single handed (catalogue No. 113).	6 for 25,000.....	120	6.00	720.00
Spatula, brain, 8½ by ½ by ¼.....	4 for 25,000.....	80	.38	30.40
Splints, wood, yucca, dozen.....	24 for 25,000.....	480	.40	192.00
Spatula, brain, 7 by ½ by ¼ inch (catalogue No. 172), 1.	24 for 25,000.....	96	.55	52.80
Spatula, 10-inch, 1.....	24 for 25,000.....	480	.50	240.00
Spatulas, 6-inch.....	24 for 25,000.....	480	.22½	108.00
Spatulas, 3-inch, 1.....	24 for 25,000.....	480	.18	86.40
Sound, tunneled (Conley), sizes 8 by 14 F of each (catalogue No. 217).	2.4 for 25,000.....	96	.70	67.20
Sound, steel, nickled, Otis, short beak, sizes 18, 20, 22, 24, 26, 28, 30 F of each (catalogue No. 218).	2.4 for 25,000.....	336	2.52	846.72
Sounds, uterine, 1.....	0.24 for 25,000.....	5	.22	1.10
Snares, wires for sizes 3, 5, 7 (catalogue No. 521) ..	360 for 25,000.....	7,200	.042	302.40

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—SURGICAL INSTRUMENTS—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Snare, tonsil (Brown), plain, and ring top (catalogue No. 520), 1.	6 for 25,000.....	120	\$3.85	\$462.00
Splints, foot, rectangular.....	0.24 for 25,000.....	5	.35	1.75
Speculum, nonmagnetic (Weeks) (catalogue No. 596.1).	2 for 25,000.....	40	1.25	50.00
Speculum, nasal, bivalve (Bosworth) (catalogue No. 512).	12 for 25,000.....	240	.40	96.00
Speculum, laryngeal, Jackson.....	2 for 25,000.....	40	15.50	620.00
Sphygmomanometer, Gaugh aneroid.....	6 for 25,000.....	120	12.50	1,500.00
Stethoscope (Standard) (catalogue No. 401), 1....	30 for 25,000.....	600	3.00	1,800.00
Syringe, ear (Pomeroy), with metal shield, 2-ounce (catalogue No. 528).	2.4 for 25,000.....	48	1.20	57.60
Syringe, ear, soft rubber, 1.....	48 for 25,000.....	960	.25	240.00
Syringes, vesical (Jonet-Frauks), metal, with rubber piston, 2 tips, 150 c.c. (catalogue No. 252).	1.2 for 25,000.....	24	4.00	96.00
Syringe, urethral (Blivetwood), glass, $\frac{1}{2}$ -ounce (catalogue No. 251).	24 for 25,000.....	480	.20	96.00
Syringe, tonsil, with extension, 3 finger rings, with 2 needles, 14k. gold points, 1 curved and 1 straight (catalogue No. 519).	1.2 for 25,000.....	24	1.50	36.00
Syringes, rectal, hard rubber, 6-ounce (par. 933)...	4.8 for 25,000.....	96	.94	90.24
Syringes, hypodermic (par. 956).....	24 for 25,000.....	480	1.25	600.00
Syringes, glass, Luer type, 30 c. c.....	120 for 25,000.....	2,400	1.50	3,600.00
Syringes, glass, Luer type, 10 c. c.....	120 for 25,000.....	2,400	.80	1,920.00
Syringes, glass, Luer type, 2 c. c.....	300 for 25,000.....	6,000	.45	2,700.00
Syringes, fountain, metal, 2-quart, graduated irrigators.	4.8 for 25,000.....	96	.65	62.40
Syringes, fountain, rubber, 1.....	120 for 25,000.....	2,400	.76	1,824.00
Syringes, ear and ulcer, 1.....	60 for 25,000.....	1,200	.076	91.20
Turning fork, 1.....	0.24 for 25,000.....	5	2.25	11.25
Tubes, stomach.....	60 for 25,000.....	1,200	.55	660.00
Tube, drainage, perineal (Hager), metal with sterling silver collar (catalogue No. 247).	12 for 25,000.....	240	1.55	372.00
Tube, abdominal, suction, Pools, 8 $\frac{1}{4}$ inches (catalogue No. 330).	2 for 25,000.....	40	.75	30.00
Trocar, antrum (Pierce-Kyle) (catalogue No. 549)...	2 for 25,000.....	40	1.50	60.00
Trephines (Hudson), set of 3.....	1 for 25,000.....	20	9.50	190.00
Trephine (Galt), $\frac{1}{2}$ -inch, crown of tool steel (catalogue No. 170).	1 for 25,000.....	20	2.50	50.00
Transilluminator, Jackson, minimum 110 volts...	0.24 for 25,000.....	5	3.00	15.00
Tonometer.....	2 for 25,000.....	40	35.00	1,400.00
Thermo-Cautery (par. 957).....	0.24 for 25,000.....	5	20.00	100.00
Tenatome, M. C. $\frac{1}{2}$ -inch blade (catalogue No. 104).	24 for 25,000.....	480	.60	288.00
Tables, instrument.....	1.2 for 25,000.....	24	5.95	142.80
Trocar, dies and plain canula, 2 sizes, $\frac{1}{4}$ by $\frac{1}{8}$ inch (catalogue No. 157.1).	2 for 25,000.....	80	.75	60.00
Tubiotome (Jackson), screw lock (catalogue No. 524).	1.2 for 25,000.....	24	5.75	138.00
Undines.....	12 for 25,000.....	240	.35	84.00
Wax, bone aseptic, in glass tubes (catalogue No. 182.1).	30 for 25,000.....	600	.133	79.80
Urethrotome No. 8 (Maisonnette) (catalogue No. 228), 1.	1.2 for 25,000.....	24	8.00	192.00
Urethroscope (Young) (catalogue No. 225), 1.....	1.2 for 25,000.....	24	13.00	312.00
Wax, bones, aseptic (catalogue No. 182), 1.....	30 for 25,000.....	600	.35	210.00
Total.....				256,538.94

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.      Item name:  
Tacks, Milonite.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div.. 4 base div.	596 per div. per year.	14,304

Total requirements..... 14,304

66077.

COST BASIS:      Net requirements..... 14,304  
\$0.75 per M.      Total cost of net requirements ..... \$10.73

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
496.66 tacks, Milonite, issued per division; 596 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price of latest order.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in past by Office of Chief Signal Officer.      Item name:  
Tags, cable, heavy artillery.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div.. 4 base div.	163.2 per div. per year.	3,917

160410.

COST BASIS:      Net requirements..... 3,917  
\$0.019.      Total cost of net requirements ..... \$74.42

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
680 tags, cable, heavy artillery, issued per division; 163.2 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Based on actual purchase of 1918. Unit price of latest order.



ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office Chief Signal Officer.

Item name: Tags, wooden, cable, trench mortar.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	75 per div. per year.	1, 800

160410.

Cost BASIS:	Net requirements.....	1, 800
\$0.019 each.	Total cost of net requirements.....	\$34. 20

- \* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
83.33 tags, wooden, cable, trench mortar, issued per division; 75 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price of latest order.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 19..

QUARTERMASTER CORPS.

M. AND E. M. DIVISION.

Appropriation: Formerly procured by Engineers.

Item name: Tally machine.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500.....	2.01 per 1,000 men....	1, 005

COST BASIS:	Net Requirements.....	1, 005
\$1.65.	Total cost of net requirements.....	\$1, 658. 25

- \* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
This material is not in stock and is to be purchased to cover initial issue. Main-tenance has already been figured on previous sheets.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Tanks, developing outfit.

	Strength.	Working basis.*	Requirements
Maintenance.....	500,000	0.08 per 1,000 men per year.	40
Total requirements.....			40
Cost BASIS:      Net requirements.....			40
\$2.              Total cost of net requirements.....			\$80

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 200 tanks, as initial equipment for Engineer troops of 500,000 men.  
Estimated life of equipment, 5 years.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS.  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

M. & E. M. DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Tripod, extension, leg, Johnson movement.

	Strength.	Working basis.*	Requirements
Maintenance.....	500.....	2.06 per 1,000 men....	1.030
Cost BASIS:      Net requirements.....			1,030
\$45.              Total cost of net requirements.....			\$46.350

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

- 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 1,030 issued as initial supply for Engineer troops with Army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.
- 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

**MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:*  
Tape, friction, pounds.

	Strength.	Working basis.*	Requirements.
Maintenance .....	20 combat div.. 4 base div.	223.89 per div. per year	5,373

<b>COST BASIS:</b>	Net requirements.....	5,373
\$0.40 per lb.	Total cost of net requirements.....	\$2,149.20

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

109.75 tape, friction, pounds issued per division; 223.89 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Average contract price.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.**

**MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:* Tape, rubber, pounds.

	Strength.	Working basis.*	Requirements.
Maintenance .....	20 combat div., 4 base div.	46.07 per div. per year.	1,106

<b>COST BASIS:</b>	Net requirements.....	1,106
\$0.36 per lb.	Total cost of net requirements.....	\$398.16

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

22.58 tape rubber pounds issued per division; 46.07 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Average contract price.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Tape, rubber.  
insulating.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	1.152 per 1,000 men per year.....	576 rolls.
Total requirements.....			576
Cost BASIS: Net requirements.....			576
\$0.72. Total cost of net requirements.....			\$414.72

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 576 rolls tape, as initial supply for Engineer troops of 500,000 men.  
Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Thermometers. pho-  
tographic.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	\$0.154 per 1,000 men per year.....	77
Total requirements.....			77
Cost BASIS: Net requirements.....			77
\$0.27. Total cost of net requirements.....			\$20.79

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 384 thermometers as initial supply for Engineer troops of 500,000 men.  
Estimated life of equipment, 5 years.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office Chief Signal Officer. *Item name:*  
Thermometer, weather (Grad.), centigrade and Fahrenheit.

	Strength.	Working basis.*	Requirements.
Maintenance .....	20 combat div. 4, base div.	13.52 per div. per year.	325
Total requirements .....			325
S-99.			
COST BASIS:	Net requirements.....		325
\$3 each.	Total cost of net requirements .....		\$975

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

22.54 thermometer, weather (Grad.), centigrade and Fahrenheit, issued per division; 13.52 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Unit price of latest order.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Tools, steel, in 5-foot bars.

	Strength.	Working basis.*	Requirements.
Maintenance .....	500, 000	0.304 per 1,000 men per year.....	152 bars.
Total requirements .....			152
COST BASIS:	Net requirements.....		152
\$2.	Total cost of net requirements .....		\$304

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 152 bars, tools, as initial equipment for Engineer troops of 500,000 men.  
Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Touche, bottles.

	Strength.	Working basis.*	Requirements.
			<i>Bottles.</i>
Maintenance.....	500, 000	0.048 per 1,000 men per year.....	24
Total requirements.....			24
Cost BASIS: Net requirements.....			24
\$0.60. Total cost of net requirements.....			\$14. 40

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue Tables, Chief of Engineers.

Basis: 24 bottles touche, as initial supply for Engineer troops of 500,000 men.

Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Transits.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.09 per 1,000 men per year.....	45
Total requirements.....			45
Cost BASIS: Net requirements.....			45
\$308. Total cost of net requirements.....			\$13, 860

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 224 transits as initial equipment for Engineer troops of 500,000 men.

Estimated life of equipment, 5 years.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Formerly procured by engineers. *Item name:* Tripods, crown,  
No. 2, folding.

	Strength.	Working basis.*	Requirements.
Maintenance .....	500, 000	0.08 per 1,000 men per year.....	40
Total requirements.....			40
Cost BASIS: Net requirements.....			40
\$4.40. Total cost of net requirements.....			\$176

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 199 tripods as initial equipment for engineer troops of 500,000 men.

Estimated life of equipment, 5 years.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriations:* Formerly procured by engineers. *Item name:* Tripods, metal  
folding.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	0.058 per 1,000 men per year.....	29
Total requirements.....			29
Cost BASIS: Net requirements.....			29
\$2.60 Total cost of net requirements.....			\$75.40

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 144 tripods, as initial equipment for engineer troops of 500,000 men.

Estimated life of equipment, 5 years.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Recent purchases.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Formerly procured by Engineers.      *Item name:* Tripods, wood, folding.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	0.976 per 1,000 men per year....	488
Total requirements.....			488
Cost BASIS:      Net requirements.....			488
\$4.50.            Total cost of net requirements.....			\$2,196

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 2,440 tripods, as initial equipment for Engineer troops of 500,000 men.

Estimated life of equipment, 5 years.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Recent purchases.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****RAW MATERIALS DIVISION.**

*Appropriation:* Formerly procured by Engineers.      *Item name:* Turpentine.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500 000	0.144 per 1,000 men per year....	72 gallons.
Total requirements.....			72 gallons.
Cost BASIS:      Net requirements.....			72
\$0.90.            Total cost of net requirements.....			\$64.80

\*"Working basis" is the quantity required per man or per unit for stated period: or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Authority: Issue tables, Chief of Engineers.

Basis: 72 gallons turpentine, as initial equipment for Engineer troops of 500,000 men. Estimated one year's supply.

**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

Recent purchases.



ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.

Item name: Unions, detonating,  
cord special.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	71.424 per 1,000 men per year.	35,712
Total requirements.....			35,712
Cost BASIS: Net requirements.....			35,712
\$0.02. Total cost of net requirements.....			\$714.24

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 35,712 unions, detonating, as initial equipment for Engineer troops of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

RAW MATERIALS DIVISION.

Appropriation: Formerly procured by Engineers.

Item name: Varnish.

	Strength.	Working basis.*	Requirements.
			Pints.
Maintenance.....	500,000	0.048 per 1 000 men per year.....	24
Total requirements.....			24
Cost BASIS: Net requirements.....			24
\$0.45. Total cost of net requirements.....			\$10.80

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 24 pints varnish, as initial equipment for Engineer troops of 500,000 men. Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION.

Appropriation:                      Item name: Veterinary supplies.

Total cost of net requirements..... \$379,117.51

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

See detailed sheets attached or Appendix No. 10.

QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION—VETERINARY SUPPLIES.

[Estimate computed on strength of 500,000 men.]

Name of item.	Working basis.	Require-ments.	Cost basis.	Total cost
Acid, hydrochloricum, ½ pound in bottle.....	2 for 25,000.....	40	\$0.30	\$12.00
Acid, boricum, powdered, 1 pound in bottle.....	396 for 25,000.....	396	.23	1,821.00
Acid, hydrochloricum, ½ pound in bottle.....	420 for 25,000.....	8,400	.30	2,520.00
Acid, salicylicum, 1 pound in bottle.....	18 for 25,000.....	360	.90	324.00
Ammonium, carbonas, 4 grains, in ball, 6 in tin (tins).	1,992 for 25,000.....	39,840	.21	8,366.40
Adrenalin et cocaina.....	96 for 25,000.....	1,920	.75	1,440.00
Arecolin, hydrobromid, 1 grain hypodermic tablets, 10 in tube.	1,080 for 25,000.....	21,600	.95	20,520.00
Argenti, nitras, fuses, 1 ounce in bottle.....	24 for 25,000.....	480	.75	360.00
Bandages, white, canton flannel, 5 yards by 3 inches.	1,032 for 25,000.....	20,640	.15	3,096.00
Bandages, muslin, roller compressed, 5 yards by 3 inches.	3,996 for 25,000.....	79,920	.09½	7,432.50
Basins, granite, 1-quart.....	3.6 for 25,000.....	72	.25	18.00
Basins, granite, 2-quart.....	3.6 for 25,000.....	72	.30	21.60
Basins, granite, 4-quart.....	3.6 for 25,000.....	72	.35	25.20
Bistoury, P. P., curved.....	18 for 25,000.....	360	.75	270.00
Bistoury, P. P., straight.....	18 for 25,000.....	360	.75	270.00
Bistoury, sharp-pointed, curved.....	24 for 25,000.....	480	.75	360.00
Blankets, horse.....	492 for 25,000.....	9,840	7.50	73,800.00
Boiler, instrument.....	6 for 25,000.....	120	4.50	540.00
Bottles, mixing, 4-ounce, wide-mouth, with rubber corks to fit.	24 for 25,000.....	480	.02	9.60
Buffer, hoof.....	6 for 25,000.....	120	.55	66.00
Camphora gum, ½ pound, in bottle.....	72 for 25,000.....	1,440	.60	864.00
Candles, pounds.....	96 for 25,000.....	1,920	.15	288.00
Candles, coach size.....	120 for 25,000.....	2,400	.15	360.00
Cases, hoof (new model).....	18 for 25,000.....	360	10.50	3,780.00
Cases, hypodermic syringes, 10 c. c.....	12 for 25,000.....	240	1.90	456.00
Cases, hypodermic tablets, 9 vials filled, 2 empty..	60 for 25,000.....	1,200	7.00	8,400.00
Cases, post mortem, veterinary (par. 975), 1.....	3 for 25,000.....	60	7.00	420.00
Cases, rectal pump (par. 966).....	31 for 25,000.....	620	7.00	4,340.00
Cases, surgical, vest pocket size.....	2 for 25,000.....	40	10.00	400.00
Cases, thermo-cautery, ether (par. 977).....	4 for 25,000.....	80	12.00	960.00
Catheters, horse, rubber, size No. 20, American, 1.	36 for 25,000.....	720	.80	576.00
Catheters, mare, metal, 1.....	2 for 25,000.....	40	.75	30.00
Caustic holder, 1.....	24 for 25,000.....	480	.42	201.60
Chests, tool, No. 2 (par. 938).....	.02 for 25,000.....	1	40.00	40.00
Chests, veterinary field unit, 1.....	360 for 25,000.....	7,200	1.35	9,720.00
Chests, veterinary, hospital No. 1, empty, set....	10 for 25,000.....	200	2.25	450.00
Chests, veterinary officers'.....	2.4 for 25,000.....	48	6.00	288.00
Chests, veterinary officers', field, 1.....	24 for 25,000.....	480	1.35	648.00
Chloroform, ½ pound in tin.....	192 for 25,000.....	3,840	.25	960.00
Chloralum hydratum, 4 drams, 6 in tube.....	278 for 25,000.....	5,560	.07	389.20
Chloroform, 1 pound in tin.....	960 for 25,000.....	960	.87	835.20
Clippers, hand.....	2 for 25,000.....	40	1.25	50.00
Clippers, machine, sheep-shearing, blades for, 1...	24 for 25,000.....	480	1.25	600.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—VETERINARY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Clippers, machine, sheep-shearing, heads for, 1...	24 for 25,000.....	480	\$2.10	1,008.00
Clippers, horse, hand.....	30 for 25,000.....	600	1.25	750.00
Clippers, horse, hand, blades for, 1.....	96 for 25,000.....	1,920	.85	1,632.00
Clippers, machine, 1.....	8 for 25,000.....	160	6.00	960.00
Clippers, machine, extra blades for.....	48 for 25,000.....	960	1.25	1,200.00
Cotton, absorbent, 1 pound in roll.....	600 for 25,000.....	12,000	.42	5,040.00
Cotton, absorbent, sterilized, in 1-ounce packages.....	12,000 for 25,000.....	240,000	.0403	9,672.00
Cupri sulphas, $\frac{1}{2}$ pound in tin.....	156 for 25,000.....	3,120	.10	312.00
Curette, $7\frac{1}{2}$ -inch.....	12 for 25,000.....	240	1.35	324.00
Curette, quitter, sharp, open bowl.....	do.....	240	1.10	264.00
Cutters, wire, small.....	4 for 25,000.....	80	.48	39.40
Director, grooved, 6-inch.....	1 for 25,000.....	20	.12	2.40
Disinfectors, cog-gear, double-acting spray pump, 50-gallons, mounted on skids.....	24 for 25,000.....	5	49.50	247.50
Disinfectors, hand, spray.....	12 for 25,000.....	240	5.85	1,404.00
Desks, field, No. 1.....	.5 for 25,000.....	10	21.00	210.00
Ferri, sulphas exsiccatus, 2 pounds in bottle.....	198 for 25,000.....	3,960	.30	1,188.00
Files, 3 sides, for sharpening clipper blades, 1.....	10 for 25,000.....	200	.12	24.00
Files, straight, 10-inch, 1.....	2 for 25,000.....	40	.25	10.00
Floats, lock, angular, 1.....	48 for 25,000.....	960	1.75	1,680.00
Floats, lock, extra blades for file.....	240 for 25,000.....	4,800	.15	720.00
Floats, lock, extra blades for rasp, 1.....	300 for 25,000.....	6,000	.15	900.00
Floats, lock, straight joint.....	48 for 25,000.....	960	2.00	1,920.00
Forceps, dressing, double-curved, 10-inch, 1.....	30 for 25,000.....	600	1.35	810.00
Forceps, dressing, plain, straight, heavy, 1.....	18 for 25,000.....	360	1.36	486.00
Forceps, dissecting, 1.....	78 for 25,000.....	1,560	.40	624.00
Forceps, hemostatic.....	do.....	1,560	.90	1,404.00
Forceps, hemostatic, Hopkins.....	6 for 25,000.....	120	.75	90.00
Forceps, Ronguer, Luers, curved.....	4 for 25,000.....	80	3.00	240.00
Forceps, tissue.....	36 for 25,000.....	720	.35	252.00
Forceps, wood, splinter.....	6 for 25,000.....	120	2.00	240.00
Funnels, E. W., 4-inch.....	3.6 for 25,000.....	72	.45	32.40
Funnels, E. W., 6-inch.....	do.....	72	.50	36.00
Gauze, sublimated, 2 $\frac{1}{2}$ -yard lengths in packages.....	1,992 for 25,000.....	39,840	.12	4,780.80
Glonion V. H. T., 1/10 gr. in tube.....	312 for 25,000.....	6,240	.05	312.00
Gloves, rubber, sizes 8 $\frac{1}{2}$ by 9, pairs.....	20 for 25,000.....	400	.35	140.00
Glycerinum, 3 pints in tin (tins).....	48 for 25,000.....	960	2.75	2,640.00
Gouge, bone, curved, 1.....	36 for 25,000.....	720	1.25	900.00
Gouge, hoof, 1.....	30 for 25,000.....	600	1.06	636.00
Gowns, operating, 1.....	78 for 25,000.....	1,560	1.50	2,340.00
Graduates, aluminum, 60 c.c., 1.....	10 for 25,000.....	200	.15	30.00
Graduates, enameled, 500 c.c., 1.....	18 for 25,000.....	360	.45	162.00
Guns, balling, 1.....	36 for 25,000.....	720	1.50	1,080.00
Hammers, hoof.....	6 for 25,000.....	120	.80	96.00
Hobbles, English, complete.....	4 for 25,000.....	80	9.50	760.00
Hoods, operating, horse.....	12 for 25,000.....	240	2.25	540.00
Hydrargyri, chloridum, corrosivum, tablets, 250 in bottle.....	396 for 25,000.....	7,920	.80	6,336.00
Hydrargyri, chloridum, mite, 30 gr. in tablets (100 in bottle).....	36 for 25,000.....	720	1.05	756.00
Hydrargyri iodidum rubrum, 1 pound in bottle.....	36 for 25,000.....	720	3.75	2,700.00
Iodoform, $\frac{1}{2}$ in. in bottles.....	102 for 25,000.....	3,840	1.25	4,800.00
Iodum—Potassii iodidum—ampules.....	30,000 for 25,000.....	600,000	.05	30,000.00
Irrigators, 4-quart, enameled, seamless, complete.....	18 for 25,000.....	360	1.30	468.00
Knives, hoof, double edge, with metal handle, 1.....	16 for 25,000.....	360	1.10	396.00
Knives, hoof, left with metal handle, 1.....	12 for 25,000.....	240	1.25	300.00
Knife, folding with 1 P. P. bistoury and 1 scalpel, 1.....	18 for 25,000.....	360	1.90	684.00
Knife, folding, with 1 sharp pointed bistoury and 1 scalpel.....	18 for 25,000.....	360	1.90	684.00
Knives, hoof, right, with metal handle, 1.....	60 for 25,000.....	1,200	1.10	1,320.00
Knives, hoof, with metal handle, 1.....	36 for 25,000.....	720	.65	468.00
Knife, sage, hoof, left, 1.....	12 for 25,000.....	240	1.00	240.00
Knife, sage, hoof, right, 1.....	12 for 25,000.....	240	1.00	240.00
Lamps, spirit glass.....	1.2 for 25,000.....	24	.15	3.60
Lamps, brazing (blow torch).....	2.4 for 25,000.....	48	3.25	156.00
Liquor, cresolis, compositus, 5-gallons in cans.....	60 for 25,000.....	1,200	2.00	2,400.00
Liquor, cresoha, comp., 1-pound in tins.....	360 for 25,000.....	7,200	.55	3,960.00
Magnesi sulphas, 100 pounds in keg.....	24 for 25,000.....	430	3.00	1,284.00
Mallet, rawhide, 1.....	1.8 for 25,000.....	36	.80	28.80
Medicine droppers, dozen.....	9.6 for 25,000.....	192	.02	3.84
Mirror, head.....	2.4 for 25,000.....	48	1.50	72.00
Molar, cutters, improved, half open.....	18 for 25,000.....	360	6.00	2,160.00
Molar, cutters, improved, open.....	18 for 25,000.....	360	6.00	2,160.00
Molar, separator, closed, 1.....	18 for 25,000.....	360	6.00	2,160.00
Mortars and pestles, wedgewood, 20 c. m., 1.....	5 for 25,000.....	100	1.00	100.00
Needles, set on, 1.....	6 for 25,000.....	120	.06	7.20

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—VETERINARY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Needles, surgical, in paraffin envelopes, 6 in a package.	300 for 25,000.....	120	\$ .60	3,600.00
Needles, sutures, Bayers, 1.....	.6 for 25,000.....	120	.06	7.20
Oakum, surgical (bales).....	9.6 for 25,000.....	192	8.00	1,536.60
Oakum, surgical, 1 pound in package.....	20 for 25,000.....	40	.20	80.00
Oleum lini, 10 gallons, in tins.....	20 for 25,000.....	400	25.00	10,000.00
Parers, hoof.....	7 for 25,000.....	140	1.60	224.00
Pill-tile.....	24 for 25,000.....	480	.70	336.00
Pilulae alonini comp. (equine purg.), 12 capsules in package.	900 for 25,000.....	18,000	.70	12,600.00
Pincers, hoof, 1.....	7 for 25,000.....	140	1.35	189.00
Pins, safety, paper.....	30 for 25,000.....	600	.05	30.00
Plaster, adhesive, Z. O., 5 yards by 2½ inches, in spools.	.96 for 25,000.....	1,920	.30	576.00
Plumbi acetas, comp., C. T., 50 in bottle (par. 902).	696 for 25,000.....	13,920	.50	6,960.00
Potassii nitras, 60-gr. C. T., 100 in bottle.....	196 for 25,000.....	3,960	.40	1,584.00
Powder duster, hard rubber.....	18 for 25,000.....	360	.45	162.00
Probes, flexible, 4-inch, 1.....	30 for 25,000.....	600	.12	72.00
Probes, flexible, 16-inch, 1.....	36 for 25,000.....	720	.35	252.00
Punches, dental, curved, 1.....	3.6 for 25,000.....	72	.50	36.00
Rasps, hoof, 1.....	1.2 for 25,000.....	240	.45	108.00
Razors, 1.....	12 for 25,000.....	360	1.10	396.00
Razors, hone for, 1.....	2 for 25,000.....	40	.30	12.00
Razors, strops for.....	2 for 25,000.....	40	1.80	72.00
Retractors, Parker's nested.....	1 for 25,000.....	30	.55	11.00
Saddle, pack (par. 963).....	.96 for 25,000.....	19	95.00	1,805.00
Saline apparatus.....	3.6 for 25,000.....	72	1.60	115.20
Scales and weight, Troemer's.....	.96 for 25,000.....	19	7.50	142.50
Scalpels, folding, sack knives, metal handles, 2-inch blade.	36 for 25,000.....	720	1.00	720.00
Scalpels, large.....	12 for 25,000.....	240	.60	144.00
Scalpels, medium.....	12 for 25,000.....	240	.60	144.00
Scalpels, small.....	12 for 25,000.....	240	.60	144.00
Scissors, dressing, 6½-inch.....	60 for 25,000.....	1,200	.85	1,020.00
Scissors, operating, 2 points, blunt, curved, 6½-inch, screw-lock, heavy.	48 for 25,000.....	960	.85	816.00
Scissors, operating, 1 point, blunt, 6½-inch, screw-lock.	.96 for 25,000.....	19	.35	6.55
Shears, fetlock.....	2.4 for 25,000.....	48	1.25	60.00
Slings, suspending, Misselman.....	8 for 25,000.....	160	28.00	4,480.00
Slings, suspending.....	4 for 25,000.....	80	28.00	2,240.00
Spatula, 4-inch, 1.....	10 for 25,000.....	200	.30	60.00
Spatula, 6-inch, 1.....	30 for 25,000.....	600	.60	360.00
Speculum, mouth.....	10 for 25,000.....	200	7.50	1,500.00
Spiritus, ammoniac, aromaticus, 1 pound in bottle.	60 for 25,000.....	1,200	.75	900.00
Sponges, animal, large.....	20 for 25,000.....	400	.40	160.00
Stocks, metal, 1.....	.96 for 25,000.....	19	100.00	1,900.00
Stoves, coal-oil, blue-flame, one-burner, 1.....	2 for 25,000.....	40	3.25	130.00
Stoves, coal-oil, one-burner, wicks for.....	31.2 for 25,000.....	624	.03	18.72
Strychnine sulphas, ¼-grain, 10 in tube.....	2,426 for 25,000.....	49,920	.06	2,995.20
Suture, assorted, 3 sizes, on reel.....	60 for 25,000.....	1,200	.40	480.00
Sutures, linen, merzon, in skeins.....	300 for 25,000.....	6,000	.07	420.00
Suture, silk, braided, No. 13, spools.....	192 for 25,000.....	3,840	.35	1,344.00
Suture, silk, braided, No. 14, spools.....	192 for 25,000.....	3,840	.40	1,536.00
Suture silk, braided, No. 15.....	996 for 25,000.....	19,920	.45	8,964.00
Suture, tape, sterilized, 18 inches each, 2 pieces in package.	396 for 25,000.....	7,920	.05	396.00
Syringe, hypodermic, 10 c. c., extra needles for, dozen.	60 for 25,000.....	1,200	.05	60.00
Syringe, hypodermic, 10 c. c., extra wires for, dozen.	60 for 25,000.....	1,200	.06	72.00
Syringe, hypodermic, 30 c. c., extra wires for, 1.....	144 for 25,000.....	2,880	.07	201.60
Syringe, hypodermic, 30 c. c., in case, 1.....	12 for 25,000.....	240	3.15	756.00
Syringe, hypodermic, 30 c. c., extra needles for, 1.....	144 for 25,000.....	2,880	.07	201.60
Syringe, hypodermic, Luer's glass, ½ c. c., 1.....	96 for 25,000.....	1,920	1.25	2,400.00
Syringe, hypodermic, Luer's, ½ c. c., extra needles for, 1.	600 for 25,000.....	12,000	.06	720.00
Syringe, hypodermic, ½ c. c., Luer's extra wire for, 1.	600 for 25,000.....	12,000	.04	480.00
Syringe, metal, close, 2-ounce, 1.....	60 for 25,000.....	1,200	.85	1,020.00
Syringe, metal, dose, 2-ounce, pipes for two sizes of each, 1.	5 for 25,000.....	100	.25	25.00
Table, equine, operating, 1.....	.2 for 25,000.....	4	240.00	960.00
Tar, pine, 1 pound in tin.....	492 for 25,000.....	9,840	.12	1,180.80
Test tubes, 3 in nest, in tin container.....	7.2 for 25,000.....	144	.20	28.80
Tester, hoof, large, 1.....	6 for 25,000.....	120	1.75	210.00
Tester, hoof, small, 1.....	6 for 25,000.....	120	1.75	210.00

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—VETERINARY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Thermometers, clinical, veterinary, in case.....	1,200 for 25,000.....	24,000	\$0.90	\$21,600.00
Trap, instrument, white enamel, seamless, nested in set of 4.	2 for 25,000.....	40	.55	22.00
Trap, metal, W. E., 8½ by 5½ by 2.....	50 for 25,000.....	1,000	.55	550.00
Trephine, Nye's, ½-inch head.....	6 for 25,000.....	120	2.25	270.00
Trephine, Nye's extra heads for 1-inch.....	6 for 25,000.....	120	1.10	132.00
Trocar and canules, sets.....	10 for 25,000.....	200	.65	130.00
Tube, containers, white metal, 9½ by ¼ inch, outside diameter, ¼-inch wall.	100 for 25,000.....	2,000	.10	200.00
Tubes, hard rubber, 3½ by 1 inch.....	100 for 25,000.....	2,000	.30	600.00
Tubes, hard rubber, for bichloride tablets.....	60 for 25,000.....	1,200	.35	420.00
Tubes, stomach.....	30 for 25,000.....	600	2.35	1,410.00
Tubes, stomach, reed-cleaning stylets.....	30 for 25,000.....	600	.25	150.00
Tube, trachea.....	30 for 25,000.....	600	1.25	750.00
Tubing, heavy wall, maroon, ½-inch outside diameter, ¼-inch wall, yards.	36 for 25,000.....	720	.15	108.00
Tubing, rubber, ½-inch, yard.....	36 for 25,000.....	720	.15	108.00
Tube, trachea, Bovettes.....	18 for 25,000.....	360	1.00	360.00
Vials, 2 drachms, empty, 1.....	300 for 25,000.....	6,000	0.17	102.00
Vials, 2-ounce, empty, with rubber stopper in tin case for iodine, 1.	480 for 25,000.....	9,600	.18	1,728.00
Vials, 16-ounce, gross.....	3.6 for 25,000.....	72	6.00	432.00
Vials, 32-ounce, gross.....	3.6 for 25,000.....	72	7.90	568.80
Wallets, farriers' (par. 970), 1.....	2 for 25,000.....	40	12.50	500.00
Wallets, veterinary, officers' (Par. 970), 1.....	2 for 25,000.....	40	6.00	240.00
Wheels, emery, for sharpening clipper blades, 1....	2 for 25,000.....	40	.10	4.00
Zinci oxidum, ½ pound in bottle.....	240 for 25,000.....	4,800	.12	576.00
Total.....				379,117.51

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office of Chief Signal Officer.  
Voltammeters, Weston, model 280.

*Item name.*

	Strength.	Working basis.*	Requirements.
Maintenance. . . .	20 combat div., 4 base div.	2.13 per div. per year.	51

Total requirements:

<b>COST BASIS:</b>	Net requirements.....	51
\$24.80 each.	Total cost of net requirements.....	\$1,264.80

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
10.7 voltammeters, Weston, model 280, issued per div.  
2.13 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price on latest orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office of Chief Signal Officer.  
Watches, stop, standard, U. S. A.

*Item name.*

	Strength.	Working basis.*	Requirements.
Maintenance. . . .	20 combat div., 4 base div.	1.05 per div. per year.	25

<b>COST BASIS:</b>	Net requirements.....	25
\$50 each.	Total cost of net requirements.....	\$1,250

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
4.37 watches, stop, standard, U. S. A., issued per div.  
1.05 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price on latest order.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer.      Item name:  
Watches, wrist, luminous dial.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	20 combat div., 4 base div.	117.89 per div. per year . . . . .	2, 829

Cost BASIS:	Net requirements . . . . .	2, 829
\$9.41½ each.	Total cost of net requirements . . . . .	\$26, 635. 04

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
491.20 watches, wrist, luminous dial, issued per div.  
117.89 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Unit price of latest order.

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

M. & E. M. DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Watches, half chronometer, luminous dial.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500	1.96 per 1,000 men . . . . .	979

Cost BASIS:	Net requirements . . . . .	979
\$35.00.	Total cost of net requirements . . . . .	\$34. 265

\*“Working basis” is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 979 issued as initial supply for Engineer troops with Army of 500,000 men.  
This material is not in stock and is to be purchased to cover initial issue.

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Estimated or recent orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Procured in the past by Office of Chief Signal Officer. *Item name:*  
Winch, hand (Balloon Co.).

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div., 4 base div.	0.39 per div. per year.	9

**COST BASIS:** Net requirements..... 9  
\$125.00. Total cost of net requirements..... \$1, 125

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
1.62 winch, hand (Balloon Co.) issued per div.  
0.39 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

**QUARTERMASTER CORPS.****MACHINERY AND ENGINEERING DIVISION.**

*Appropriation:* Formerly procured by Engineers. *Item name:* Wire, B. S. No. 10.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	12 per 1,000 men per year.....	<i>Pounds.</i> 6, 000

Total requirements..... 6, 000

**COST BASIS:** Net requirements..... 6, 000  
\$0.04. Total cost of net requirements..... \$240

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue Tables, Chief of Engineers.  
Basis: 6,000 pounds wire, as initial equipment for Engr. tr. for 500,000 men.  
Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.



# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Wire, B. &amp; S. No. 16.

	Strength.	Working basis.*	Requirements.
			Pounds.
Maintenance.....	500, 000	44.4 per 1,000 men per year.....	22, 200
Total requirements.....			22, 200
Cost Basis: Net requirements.....			22, 200
\$0.04 per lb. Total cost of net requirements.....			\$888

\* "Work basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 22,200 pounds wire, as initial equipment for Engr. tr. of 500,000 men.

Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers. Item name: Wire, copper, No. 30,  $\frac{1}{4}$ -pound spools.

	Strength.	Working basis.*	Requirements.
			Spools.
Maintenance.....	500, 000	1.61 per 1,000 men per year.....	805
Total requirements.....			805
Cost Basis: Net requirements.....			805
\$0.20. Total cost of net requirements.....			\$161

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 805 spools, wire, as initial equipment for Engr. tr. of 500,000 men.

Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer. Item name:  
Wire, field, U. S. standard, single miles.

	Strength.	Working basis.*	Requirements
Maintenance.....	20 combat div., 4 base div.	40.66 per div. per year.	976

Cost Basis:	Net requirements.....	976
\$93 per mile.	Total cost of net requirements.....	\$90,768

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
40.66 wire, field, U. S. standard, issued per div.  
40.66 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Taken from previous orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer. Item name:  
Wire, field, U. S. standard, T. P. miles.

	Strength.	Working basis.*	Requirements
Maintenance.....	20 combat div., 4 base div.	121.98 per div. per year.	2,926

Cost Basis:	Net requirements.....	2,926
\$198 per mile.	Total cost of net requirements.....	\$579,348

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
121.98 wire, field, U. S. standard, T. P. miles, issued per div.  
121.98 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Taken from previous orders.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Formerly procured by Engineers. *Item name:* Wire, firing, double lead, No. 14.

	Strength.	Working basis.*	Requirements.
			<i>Feet.</i>
Maintenance .....	500,000	1,152 per 1,000 men per year.	576,000
Total requirements (feet) .....			576,000
Cost BASIS: Net requirements .....			576,000
\$0.015. Total cost of net requirements .....			\$8,640

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Authority: Issue tables, Chief of Engineers.

Basis: 576,000 feet wire, as initial equipment for Engineer troops of 500,000 men.

Estimated one year's supply.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Recent purchases.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Procured in the past by Office of Chief Signal Officer. *Item name:* Wire, G. I., No. 14 B. W. G., 82 miles.

	Strength.	Working basis.*	Requirements.
Maintenance .....	20 combat div., 4 base div.	14.54 per div. per year.	349

Cost BASIS: Net requirements .....	349
\$7.88 per 100 lbs. Total cost of net requirements .....	\$2,750.12

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

14.54 wire, G. I., No. 14 B. W. G., 82 miles issued per division; 14.54 maintenance per division per year. Wastage for United States training approved by Chief Signal Officer.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Price taken from previous orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Wire, netting, No. 16, B. & S.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000.....	168 per 1,000 men per year.	8,000 square feet.
Total requirements.....			8,400
COST BASIS:      Net requirements.....			8,400
\$0.01.      Total cost of net requirements.....			\$84

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority: Issue tables, Chief of Engineers.  
Basis: 8,400 square feet wire, as initial equipment for Engr. tr. of 500,000 men.  
Estimated one year's supply.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Recent purchases.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MACHINERY AND ENGINEERING DIVISION.

Appropriation: Procured in the past by Office of Chief Signal Officer.      Item name: Wire, O. D., T. P., No. 17 B. & S., miles.

	Strength.	Working basis.*	Requirements.
Maintenance.....	20 combat div. 4 base div.	17.58 per div. per year.	422
COST BASIS:      Net requirements.....			422
\$15.87 per mile. Total cost of net requirements.....			\$35,360.90

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
17.58 wire, O. D., T. P., No. 17 B. & S., issued per div.  
17.58 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Price taken from previous orders.

**ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

## QUARTERMASTER CORPS.

## MACHINERY AND ENGINEERING DIVISION.

*Appropriation:* Procured in the past by Office of Chief Signal Officer.  
Wire, outpost, T. P. miles. . . .

*Item name:*

	Strength.	Working basis.*	Requirements
Maintenance. . . .	20 combat div., 4 base div.	359.16 per div. per year.	8,620

<b>COST BASIS:</b>	<b>Net requirements.</b> .....	<b>8,620</b>
<b>\$113.50 per mile.</b>	<b>Total cost of net requirements.</b> .....	<b>\$978,370</b>

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

359.16 wire, outpost, T. P. miles issued per div.

359.16 maintenance per div. per year. Wastage for United States training approved by Chief Signal Officer.

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Price taken from previous orders.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION.

Appropriation: Item name: X-ray supplies.

Total cost of net requirements. . . . . \$698, 881. 72

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 12.

QUARTERMASTER CORPS.

MEDICAL AND HOSPITAL SUPPLIES DIVISION—X-RAY SUPPLIES.

[Estimates computed on strength of 500,000 men.]

Name of item.	Working basis.	Require- ments.	Cost basis.	Total cost.
Apparatus, X-ray interrupterless type (1502).....	0.10 for 25,000.....	2	\$975.00	\$1, 950.00
Apparatus, interrupterless Victor, auto trans- former for.	0.12 for 25,000.....	2	75.00	150.00
Apron, lead, protective, with leather straps (1503), 1.	1 for 25,000.....	20	6.25	125.00
Apron, waterproof, 50 inches long (1504), 1.....	2 for 25,000.....	40	.80	32.00
Barium sulphate, for X-ray diagnosis, 1 pound in bottle.	144 for 25,000.....	2, 880	.21	604.80
Bedside X-ray unit, cabinet, and tube holder for..	0.24 for 25,000.....	5	150.00	750.00
Bedside X-ray unit, cable for (1577).....	0.24 for 25,000.....	5	32.50	162.50
Bedside X-ray unit, cable cathods, with lamp socket for, 1.	0.24 for 25,000.....	5	1.00	5.00
Bedside X-ray units, complete (1575).....	0.24 for 25,000.....	5	400.00	2, 000.00
Bedside high-tension transformer, 1.....	0.12 for 25,000.....	2	250.00	500.00
Bedside X-ray unit, high-tension transformer for (1576).	0.24 for 25,000.....	5	250.00	1, 250.00
Bedside unit, tube holder for.....	0.12 for 25,000.....	2	9.50	19.00
Box, for localizing apparatus (1507.1).....	1 for 25,000.....	20	30.00	600.00
Box, lined with $\frac{1}{8}$ -inch sheet lead, water-tight (1505).	2 for 25,000.....	40	12.50	500.00
Box, lined with $\frac{1}{8}$ -inch sheet lead on all sides (1506).	2 for 25,000.....	40	20.00	800.00
Box, wooden (1507).....	2 for 25,000.....	40	2.00	80.00
Breaker circuit, 220 volt, 100 ampere, maximum (1507.3).	0.24 for 25,000.....	5	26.00	130.00
Brush, camels hair, 3 inches (1508), 1.....	2 for 25,000.....	40	.53	21.20
Cable, 50 feet (1620).....	0.24 for 25,000.....	5	32.50	162.50
Cassettes, with screens 8 by 10 inches, 1.....	12 for 25,000.....	240	6.50	1, 560.00
Carriers, film, 8 by 10 inches (1510.1).....	12 for 25,000.....	240	.93	223.20
Carriers, film (case), 14 by 17 inches (1510.1).....	12 for 25,000.....	240	1.16	278.40
Carriers, film (case), 10 by 12 inches (1510).....	12 for 25,000.....	240	.66	158.40
Carriers, plate, core, 14 by 17 inches, monel metal.	12 for 25,000.....	240	1.16	278.40
Cassettes, with screens, 10 by 12 inches, 1.....	12 for 25,000.....	240	7.60	1, 824.00
Cassettes, with screens, 14 by 17 inches, 1.....	12 for 25,000.....	240	10.75	2, 580.00
Chart, eye, localizing Kelley-Koett (1410.2). 1.....	60 for 25,000.....	1, 200	1 5.00	6.00
Charts, eye, localizing for Victor sweet localizer, 1.	24 for 25,000.....	480	1 5.00	2.40
Cord, parallel, No. 16, feet.....	120 for 25,000.....	2, 400	.10	240.00
Crocks, earthenware, 5 gallon (1511), 1.....	1 for 25,000.....	20	2.00	40.00
Delco outfit, $\frac{1}{4}$ kilowatt, brush holder, spring for, sets.	0.24 for 25,000.....	5	2.45	12.25
Delco outfit, $\frac{1}{4}$ kilowatt ignition coils for, 1.....	0.24 for 25,000.....	5	5.75	28.75
Delco outfit, $\frac{1}{4}$ kilowatt piston rings for.....	0.48 for 25,000.....	10	.25	2.50
Delco outfit, $\frac{1}{4}$ kilowatt spark plugs for, 1.....	5 for 25,000.....	100	1.00	100.00
Delco outfit, $\frac{1}{4}$ kilowatt throttle control solenoid for, 1.	0.24 for 25,000.....	5	10.85	54.25
Developing powder, Eastman's, each package to make 1 gallon (package).	360 for 25,000.....	7, 200	.84	6, 048.00
Disks, rectifying, Victor, 1.....	24 for 25,000.....	480	20.00	9, 600.00

<sup>1</sup> Per thousand.

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—X-RAY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Films, dental, holders for development, Eastman (1512), 1.	6 for 25,000.....	120	\$1.00	\$120.00
Films, dental, positive, 1½ by 1½ inches, No. 1....	60 for 25,000.....	1,200	4.00	4,800.00
Films, dental, positive, 1½ by 2½ inches, No. 1A (1513), gross.	120 for 25,000.....	2,400	.56525	1,356.00
Films, X-ray, 5 by 7 inches.....	720 for 25,000.....	14,400	.83½	12,000.00
Film holders (case type), Eastman, to accommodate 8 by 10 films between two screens, dozen..	1.2 for 25,000.....	24	6.80	163.20
Film holders (case type), Eastman, to accommodate 10 by 12 films between two screens.	1.2 for 25,000.....	24	8.00	192.00
Film holders (case type), Eastman, to accommodate 14 by 17 films between two screens.	1.2 for 25,000.....	24	12.00	288.00
Film holders, Eastman, for exposure, 8 by 10 inches (1512.2), 1.	0.24 for 25,000.....	5	.10	.50
Film holders, Eastman, for exposure, 10 by 12 inches (1512.3).	0.24 for 25,000.....	5	.15	.75
Film holders, Eastman, for exposure, 14 by 8½ inches (1514.3).	0.24 for 25,000.....	5	.15	.75
Film holders, Eastman, for exposure, 14 by 17 inches (1514.4), 1.	0.24 for 25,000.....	5	.20	1.00
Films, X-ray, 8½ by 14 inches, dozen.....	12 for 25,000.....	240	3.00	720.00
Films, X-ray, 8 by 10 inches (1514.1), dozen.....	360 for 25,000.....	7,200	1.90	13,680.00
Films, X-ray, 10 by 12 inches (1514.2), dozen.....	360 for 25,000.....	7,200	3.00	21,600.00
Films, X-ray, 14 by 17 inches (1514.4), dozen.....	300 for 25,000.....	6,000	5.83½	35,000.00
Funnels, enamelware, 6 inches (1515).....	0.6 for 25,000.....	12	.32	3.84
Fuse screw plugs, 10 amperes.....	48 for 25,000.....	960	.10	96.00
Generator, Delco, armatures for, with commutator and slip rings, 1.	0.12 for 25,000.....	2	71.50	143.00
Generator, Delco, A. C., brushes for (sets).....	2 for 25,000.....	40	.60	24.00
Generator, Delco, D. C., brushes for (sets).....	2 for 25,000.....	40	.20	8.00
Glass, ground for stereoscopes 1.....	1 for 25,000.....	20	2.00	40.00
Glass cutter (1515.1), 1.....	0.48 for 25,000.....	10	.10	1.00
Glass, lead, ¼ inch thick, 8 by 10 inches (pieces) (1516).	0.48 for 25,000.....	10	2.83	28.30
Glass, lead, ¼ inch thick, 10 by 10 inches pierced in center (pieces).	0.24 for 25,000.....	5	3.69	18.45
Glass, lead, ¼ inch thick, 11 by 14 inches (pieces).	0.24 for 25,000.....	5	5.45	27.25
Goggles, automobile type, fitted with red and green superimposed clear polished celluloid, Arlington pyralin colors, 24 by 1,810.01 inch thick finish H. H. (1518), (pairs).	1 for 25,000.....	20	1.10	22.00
Hydroquinone, ½ pound in bottles.....	60 for 25,000.....	1,200	.64	768.00
Insulators, four arm for high tension wires (1519.1).	0.48 for 25,000.....	10	3.30	33.00
Insulators, wall, for high tension wires (1519), 1..	1 for 25,000.....	20	1.00	20.00
Lamps, electric, orange ruby, 110 volts, 25-watt (1516).	2.4 for 25,000.....	48	1.91	91.68
Lamps, tungsten, nitrogen, 100 watts, 110 volts...	12 for 25,000.....	240	1.12	268.80
Lead foil, medium thickness (1520).....	6 for 25,000.....	120	.25	30.00
Lead in sheets, 4 pounds to square foot (1522)....	12 for 25,000.....	240	.60	144.00
Light, incandescent, blue with pull switches for fluoroscopic room, 16 C. T. (1521).	12 for 25,000.....	240	.85	204.00
Localizer, eye, Kelly-Koett (1523).....	0.24 for 25,000.....	5	38.50	192.50
Marker, skin (1524.1).....	0.60 for 25,000.....	12	1.90	22.80
Metol or equivalent, 1 ounce, in bottle.....	96 for 25,000.....	1,920	1.25	2,400.00
Milliamperemeter, 0-30 M. A.....	0.24 for 25,000.....	5	12.00	60.00
Milliamperemeter, 0-100 (two scales).....	0.24 for 25,000.....	5	12.00	60.00
Milliamperemeter (1578).....	0.24 for 25,000.....	5	8.00	40.00
Motor synchronous, 220 V., A. C., 5 cycle, for Victor machine.	0.12 for 25,000.....	3	200.00	600.00
Number lead, ½ inch, 1 to 0, sets.....	2 for 25,000.....	40	.40	16.00
Nut wrench, "Carl," 6-inch thin-jaw Kelly-Koett (1518), 1.	1 for 25,000.....	20	1.25	25.00
Paper, bromide (glossy), 5 by 7 inches.....	60 for 25,000.....	1,200	.26½	315.00
Portable X-ray, outfit transformer for (1609), 1..	0.24 for 25,000.....	5	50.00	250.00
Portable X-ray outfit, transformer, Coolidge filament, lighting for (1610), 1.	0.24 for 25,000.....	5	28.00	140.00
Portable X-ray outfit, Victor filament control for, 1.	0.6 for 25,000.....	12	30.00	360.00
Potassium bromide, 1 pound, in wide-mouth bottle, bottle.	18 for 25,000.....	360	1.43	514.80
Preservers, negatives for 5 by 7 inch plates (1528)..	12,000 for 25,000.....	240,000	12.00	480.00
Preservers, negatives for 8 by 10-inch plates (1528).	48,000 for 25,000.....	960,000	14.00	3,840.00
Preservers, negatives for 10 by 12-inch plates (1527)	24,000 for 25,000.....	480,000	16.25	3,000.00
Preservers, negative for 14 by 17-inch.....	19,200 for 25,000.....	384,000	10.75	4,128.00
Racks, plate-drying, folding, for 1 dozen plates..	2 for 25,000.....	40	.30	12.00
Radiometer, Hampsons', or equivalent (1534), 1..	0.24 for 25,000.....	5	13.50	67.50
Reels, double Coolidge (1536), 1.....	1 for 25,000.....	20	6.38	127.60

¹ Per thousand.

## QUARTERMASTER CORPS—Continued.

## MEDICAL AND HOSPITAL SUPPLIES DIVISION—X-RAY SUPPLIES—continued.

Name of item.	Working basis.	Require- ments.	Cost basis.	Total cost
Reels, single for bedside, 1	1 for 25,000	20	92.00	\$18.40
Reels, trolley (1535), 1	1 for 25,000	20	3.19	63.80
Resistance, 10-ohm, for 220-volt rotary, 1	0.24 for 25,000	5	1.10	5.50
Röntgenoscope (1537), 1	0.24 for 25,000	5	350.25	1,751.25
Rotary converter, A. C., bedside, brushes for, sets	5 for 25,000	100	.60	60.00
Rotary converter, bedside, 110-volt (1581), 1	0.24 for 25,000	5	60.00	300.00
Rotary converters, 110 D. C., 7½-kilowatt, 1	0.24 for 25,000	5	60.00	300.00
Rotary converter, bedside, 220 volts (1581.1), 1	0.24 for 25,000	5	65.00	325.00
Rotary converter, D. C., bedside brushes for, sets	5 for 25,000	100	.60	60.00
Ruler, wood (15 inches), with metric system (1538.1), 1	5 for 25,000	100	.80	80.00
Safe light, dark-room, matton or kodak (1539.1)	0.24 for 25,000	5	5.40	27.00
Sandbags, 3 by 4 by 18 inches, empty, open one end (1540.1)	4.8 for 25,000	96	.35	33.60
Sandbags, 5 by 4 by 8 inches, empty, open one end (1540.2)	4.8 for 25,000	96	.35	33.60
Screens, fluoroscopic, for portable, 10 by 10 inches	24 for 25,000	5	36.00	180.00
Screens, intensifying, mounted in cassettes detachable, size 8 by 10 inches (1541.2)	0.24 for 25,000	5	14.96½	74.81
Screens, intensifying, mounted in cassettes detachable, size 10 by 12 inches (1541.1)	0.24 for 25,000	5	21.37½	106.88
Screens, intensifying, mounted in cassettes, detachable size, 14 by 17 (1541)	0.24 for 25,000	5	40.85	204.25
Screens, intensifying, without cassettes, in cardboard folder, 5 by 7 inches	0.24 for 25,000	5	5.00	25.00
Screens, intensifying, without cassettes furnished, in cardboard folders, size 8 by 10 inches (1542.2)	0.24 for 25,000	5	14.96½	74.81
Screens, intensifying, without cassettes, furnished in cardboard folders, size 10 by 12 (1542.1)	0.24 for 25,000	5	21.375	106.88
Screens, intensifying without cassettes, furnished in cardboard folders, size 14 by 17 (1542)	0.24 for 25,000	5	40.85	204.25
Shields, separable, lead glass	0.24 for 25,000	5	11.00	55.00
Slides, lantern, cover, glasses for	18 for 25,000	360	.0125	4.50
Sodium carbonate, 1 pound in bottles, bottles	120 for 25,000	2,400	.18	432.00
Sodium hyposulphate 1 pound, in tins, tins	600 for 25,000	12,000	.034	408.00
Tank, porcelain, 4½ by 14½ by 20 inches (1552), 1	0.24 for 25,000	5	10.00	50.00
Sodium sulphite, dry in 1 pound bottles, bottles	120 for 25,000	2,400	.21	504.00
Stands, tube, K. K., glass bowl for, 1	0.12 for 25,000	2	16.00	32.00
Stands, tube, Kelley-Koett type or equivalent (1543), 1	0.24 for 25,000	5	172.75	863.75
Switch, foot (Kelley-Koett, pl. 51 bat., No. 24 or equivalent) (1547.1), 1	0.24 for 25,000	5	20.00	100.00
Switch, operating, Victor, portable, 1	0.24 for 25,000	5	22.50	112.50
Stands, tube, Victor castors for, 1	0.24 for 25,000	5	1.50	7.50
Stereoscope, Wheatstone, (1546), 1	0.24 for 25,000	5	75.00	375.00
Tools, set (1556)	0.6 for 25,000	12	3.85	46.20
Time switch, wapper or equivalent (1554.1)	2 for 25,000	40	75.00	3,000.00
Transformer, Coolidge filament lighting (1559)	0.24 for 25,000	5	28.00	140.00
Trays, developing, porcelain, lines, 10 by 12 inches	2 for 25,000	40	1.05	42.00
Trays, developing, porcelain lined, 14 by 17 inches	2 for 25,000	40	2.25	90.00
Trays, enamelware, 10 by 12 inches (1557)	1 for 25,000	20	1.25	25.00
Tank, porcelain, 14½ by 14½ by 20 inches, 1	0.24 for 25,000	5	18.00	75.00
Paper, print, glossy Velox, hard, 8 by 10 inches, dozen	48 for 25,000	960	.80	576.00
.....	48 for 25,000	960	.90	864.00
.....	960 for 25,000	19,200	1.20	2,304.00
sets	960 for 25,000	19,200	4.00	76.80
.....	360 for 25,000	7,200	.06½	468.00
.....	360 for 25,000	7,200	.06½	468.00
.....	0.6 for 25,000	12	.60	7.20
lates,	2.4 for 25,000	48	137.00	6,576.00
.....	1,596 for 25,000	31,920	.85	27,132.00
.....	3,996 for 25,000	79,920	1.85	147,852.00
.....	1,992 for 25,000	39,840	3.20	127,488.00
.....	1,596 for 25,000	31,920	6.85	218,652.00
.....	12 for 25,000	240	.27	64.80
inches	9.6 for 25,000	192	8.36	1,605.12
.....	2.4 for 25,000	48	.45	21.60
.....	0.6 for 25,000	12	10.00	120.00
.....	0.6 for 25,000	12	60.00	720.00
.....	0.24 for 25,000	5	1,026.00	5,130.00
table	24 for 25,000	5	325.00	1,625.00
.....	0.24 for 25,000	5	8.00	40.00

¹ Per thousand.



## QUARTERMATTER CORPS—Continued.

## MEDICAL AND HOSPITAL DIVISION—X-RAY SUPPLIES—continued.

Name of item.	Working basis.	Requirements.	Cost basis.	Total cost.
Portable X-ray outfit, filament control, inductive type for, 1.	0.24 for 25,000.....	5	\$30.00	\$150.00
Portable X-ray outfit, fluoroscope for (1663), 1....	0.6 for 25,000.....	12	75.00	900.00
Portable X-ray outfit, gasoline electric set, (Delco) for (1604), 1.	0.24 for 25,000.....	5	320.00	1,600.00
Portable X-ray outfit, rail frame for table, 1.....	0.24 for 25,000.....	5	4.00	20.00
Portable X-ray outfit, rheostat for (1608), 1.....	0.24 for 25,000.....	5	15.00	75.00
Trays, enamel ware, 14 by 17 inches (1556).....	6 for 25,000.....	120	2.25	270.00
Tape, binding, for lantern slides, rolls.....	4.8 for 25,000.....	96	1.00	96.00
Tubes, Coolidge, special radiator type, 30 ma. limit.	0.6 for 25,000.....	12	80.00	960.00
Tubes, Coolidge, medium focus (1559).....	1 for 25,000.....	20	80.00	1,600.00
Tubes, Coolidge, special radiator type (1559.1)....	0.60 for 25,000.....	12	80.00	960.00
Tubes, tungsten target (1560).....	0.60 for 25,000.....	12	22.00	264.00
Tunnels, plate-changing aluminum, 17 by 17 inches, with 1 plate drawer, Kelley-Koett (1563.1), 1.	0.24 for 25,000.....	5	18.00	90.00
Turnbuckles, 6-inch, for trolley (1564.2), 1.....	2.4 for 25,000.....	48	.20	9.60
Valves, with springs, complete ( $\frac{1}{4}$ kilowatt), exhaust, 1.	1.2 for 25,000.....	24	.85	20.40
Valves, with springs, complete ( $\frac{1}{4}$ kilowatt), inlet, 1.	1.2 for 25,000.....	24	.85	20.40
Voltmeter, alternating current, scale 0-175 (1613)...	0.24 for 25,000.....	5	16.00	80.00
Wedge, wooden, 12 by 3 inches, angle 23 degrees (1564.1), 1.	0.24 for 25,000.....	5	2.00	10.00
Wire, annunciator (1565.8), pounds.....	0.24 for 25,000.....	5	.45	2.25
Wire, bronze, for overhead system, No. 10 (1565), feet.	2 for 25,000.....	40	.03	1.20
Wire, copper, spool of 12 yards in length, No. 16 gauge (spool) (1565.1).	2 for 25,000.....	40	.18	7.20
Wire, single-braid, rubber covered, No. 10, feet...	6 for 25,000.....	120	.06	7.20
Wire, single-braid, rubber covered, No. 14, feet...	1 for 25,000.....	20	.05	1.00
<b>Total</b> .....				<b>608,881.72</b>

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 19...

QUARTERMASTER CORPS.

M. AND E. M. DIVISION.

Appropriation: Formerly procured by Engineers.      Item name: Zinc, squares.

	Strength.	Working basis.*	Requirement.
Maintenance .....	500 .....	0.4 per 1,000 men .....	200

COST BASIS:      Net requirements..... 200  
\$1.65.      Total cost of net requirements..... \$330

\*"Working basis" is the quantity required per man or per unit for stated period:  
or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Authority: Issue tables, Chief of Engineers.  
    Basis: 200 issued as initial supply for Engineer troops with Army of 500,000 men.  
    This material is not in stock and is to be purchased to cover initial issue.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
    Estimated or recent orders.

X





# ARMY APPROPRIATION BILL

1920



**HORSES FOR CAVALRY, ARTILLERY, AND ENGINEERS, ETC.**

**BARRACKS AND QUARTERS**

**MILITARY POST EXCHANGES**

**ROADS, WALKS, WHARVES, AND DRAINAGE**

**BARRACKS AND QUARTERS, PHILIPPINE ISLANDS**

**CONSTRUCTION AND REPAIR OF HOSPITALS**

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**Printed for the use of the Committee on Military Affairs of the House**

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**PART 6**

**WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1919**



HORSES FOR CAVALRY, ARTILLERY, ENGINEERS, ETC.

Item.	Amount.	Division making estimate.
Purchase for—		
269. Remounts.....	\$213,885	Remount.
270. Officers.....		Do.
271. Cavalry.....	907,500	Do.
272. Artillery.....	721,875	Do.
273. Signal Corps.....		Do.
274. Engineers.....		Do.
275. United States Military Academy.....		Do.
276. Service schools and staff colleges.....		Do.
277. Indian scouts.....		Do.
278. Infantry.....		Do.
279. Hospital Corps.....		Do.
280. Expenses incident to purchase.....	3,300	Do.
270a. Horses for train headquarters and military police.....		Do.
279b. Horses for ammunition trains.....		Do.
279c. Horses for Corps and Army troops.....		
Total.....	1,846,560	

McL.

(Copy.)

CPG.

Equip. 2706.

DECEMBER 18, 1918.

MEMORANDUM FOR THE DIRECTOR OF PURCHASE, STORAGE AND TRAFFIC.

Subject: Additional sale of animals.

1. On reconsideration of this matter the Chief of Staff directs that the following animals be retained; for an Army of 500,000 men. This estimate includes 29 regiments of Cavalry.

	Horses.		Mules.		Total.
	Cavalry.	Artillery.	Draft.	Pack and riding.	
For Army of 500,000 men (skeletonized).....	40,000	25,000	40,000	4,000	.....
10 per cent surplus.....	4,000	2,500	4,000	400	.....
	44,000	27,500	44,000	4,400	119,900

2. Authority is granted to dispose of the difference between the animals on hand and those required as shown above.

HENRY JERVEY,  
Major General, General Staff,  
Assistant to the Chief of Staff,  
Director of Operations.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE, AND TRAFFIC.

Item No. 269.

REMOUNT DIVISION.

Appropriation: H. C. A. &amp; E.      Item name: Horses for remounts.

Total requirements..... 1,500

Cost BASIS:	Net requirements.....	1,500
\$142.59.	Total cost of net requirements.....	\$213,885

## 2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

Based on average cost of remounts purchased during fiscal year 1918.

## 5. REMARKS:

The amount estimated for under this item is required for the purpose of purchasing approximately 500 three-year-old horses which have been bred under agreement with the Department of Agriculture (copy herewith) and also for the purchase of 1,000 young horses from farmers in the vicinity of the remount depots at Fort Keogh, Mont., and Fort Reno, Okla., in order to encourage the breeding of horses for the military service. There were 1,910 young horses purchased in the vicinity of Fort Keogh, Mont., and Fort Reno, Okla., during the fiscal year 1918.

## AGREEMENT.

This agreement, made and entered into \_\_\_\_\_, 191—, by and between \_\_\_\_\_ for and on behalf of the United States of America, party of the first part, and \_\_\_\_\_, of \_\_\_\_\_, State of \_\_\_\_\_, party of the second part:

Whereas the parties hereto desire to breed horses suitable for the use of the United States Government, now this agreement witnesseth:

First. The party of the first part does hereby promise and agree as follows: To furnish the service of the stallion \_\_\_\_\_ for the mare \_\_\_\_\_, of the party of the second part, during the season of 191—, and to repeat the service of the said stallion during the same breeding season in the event that the said mare fails to prove in foal after the first service.

Second. The party of the second part does hereby promise and agree as follows: In consideration of the service of said stallion, as hereinbefore provided, to grant to the United States of America an option, in the event of an appropriation being made available for that purpose by Congress, to purchase, for the sum of \$\_\_\_\_\_, the resulting foal at any time during the year the same is three years old, it being understood that a horse is one year of age on the first day of January next following after it is foaled: *Provided*, That the party of the second part shall have the right, in lieu of granting the option hereinbefore mentioned, to pay a service fee of \$\_\_\_\_\_ at any time before the option of the party of the first part is exercised, after which no service fee shall be exacted.

Third. It is further mutually understood and agreed by and between the parties hereto as follows:

1. That in case the party of the second part should sell the mare or the resulting foal the party of the second part shall pay to the party of the first part the sum of twenty-five dollars (\$25.00) as a service fee: *Provided*, That such sum shall not become due and payable if satisfactory evidence is furnished to the party of the first part that said mare did not produce a live foal: *And provided further*, That such sum shall not become due and payable on the in-foal mare, if sold, or on the resulting foal if sold before weaning time, if the party purchasing the in-foal mare, or the mare and resulting foal, agrees in writing to assume the obligations of the party of the second part under this agreement.

2. That the party of the first part shall upon the request of the party of the second part waive its option on a filly foal bred and foaled under the provisions of this agreement and charge no service fee for the same: *Provided*, That such filly foal is sound.



and a desirable type for breeding purposes. The examination of a filly for this privilege will be made by the inspecting officer when said filly is presented for the Government's option. A filly so retained by the owner will be given a number in the Remount Brood Mare Register and a certificate of breeding will be issued by the Government to the owner without charge.

3. That under the provisions of paragraph 1 of this agreement, the party of the second part will notify the Chief of the Bureau of Animal Industry of the Department of Agriculture, Washington, D. C., promptly in advance of any sale of a mare or foal; the party of the second part further agrees to notify the Chief of the Bureau of Animal Industry of the said Department of Agriculture promptly of the result of the service provided under this agreement, upon forms to be furnished by said Department of Agriculture.

4. That this agreement shall not be assigned in whole or in part; that no Member of or Delegate to Congress, or Resident Commissioner, after his election or appointment, and either before or after he has qualified and during his continuance in office, and no officer, agent, or employee of the Government shall be admitted to any share or part of this contract or agreement, or to any benefit arising thereupon. Nothing, however, herein contained shall be construed to extend to any incorporated company, where such contract or agreement is made for the general benefit of such incorporation or company (section 3741, Revised Statutes, and sections 114-116, act of March 4, 1909).

In testimony whereof the parties hereto have executed this agreement on the day, month, and year first above written.

Witness: \_\_\_\_\_.

\_\_\_\_\_,  
*The United States of America, Party of the First Part.*

Witness: \_\_\_\_\_.

\_\_\_\_\_,  
*Party of the Second Part.*

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE, AND TRAFFIC.

Item No. 270.

REMOUNT DIVISION.

Appropriation: H. C. A. &amp; E.

Item name: Horses for officers entitled to public mounts.

	Strength.	Working basis.*	Requirements.
Initial equipment....	20 combat divs.....	364.....	7,280
	4 base depot divs.....	66.....	264
	20 Cavalry regts.....	95.....	1,900
Maintenance.....	.....	10 per cent of 9,444.....	.....

Total requirements..... 10,388

Deductions:

Estimated quantity on hand July 1, 1919..... 10,388

Total deductions..... 10,388

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Tables of Organization, 1918.

Date, Nov. 29, 1918.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE, AND TRAFFIC.

Item No. 271.

REMOUNT DIVISION.

Appropriation: H. C. A. &amp; E.

Item name: Horses for Cavalry.

Maintenance, 12½ per cent of 44,000 Cavalry horses..... 5,500

Total requirements..... 5,500

Cost Basis:	Net requirements.....	5,500
\$165.	Total cost of net requirements.....	\$907,500

5. REMARKS:

Total of 119,900 animals retained for the needs of the entire Army during the fiscal year 1920, as per memorandum from the Division of Operations, General Staff, dated Dec. 18, 1918.

Date, 1-6-19.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE AND TRAFFIC.

Item No. 272.

REMOUNT DIVISION.

*Appropriation:* H. C. A. & E.      *Item name:* Horses for Artillery.

Maintenance, 12½% of 27,500 Artillery horses.....	3,438
Total requirements.....	3,438

COST BASIS:	Net requirements.....	3,438
\$210.	Total cost of net requirements.....	\$721,875

## 5. REMARKS:

Total of 119,900 animals retained for the needs of the entire Army during the fiscal year 1920, as per memorandum from the Division of Operations, General Staff, dated Dec. 18, 1918.

Date, 1-6-19.

# ESTIMATE FOR EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE AND TRAFFIC.

Item No. 273.

REMOUNT DIVISION.

*Appropriation:* H. C. A. & E.      *Item name:* Horses for Signal Corps.

	Strength.	Working basis.*	Requirements.
Initial equipment....	20 combat divs., 4 base depot divs.	12 draft per div.....	240
Maintenance.....		10 per cent of 240.....	24
Total requirements.....			264

## Deductions:

Estimated quantity on hand July 1, 1919.....	264
Total deductions.....	264

\* "Working basis" is the quantity required per man or per unit for stated period, or other factor used in arriving at the requirements.

## 1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

Tables of Organization, 1918.

Date, Nov. 29, 1918.

Form F 1.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**  
**FISCAL YEAR 1920.**

**PURCHASE, STORAGE AND TRAFFIC**

Item No. 274.

**REMOUNT DIVISION.**

*Appropriation:* H. C. A. & E.      *Item name:* Horses for Engineers.

	Strength.	Working basis.*	Requirements.	
			Draft.	Riding.
Initial equipment....	20 combat divs., 4 base depot divs.	Draft, 108; riding, 60	2, 160	1, 200
Maintenance.....		10 per cent.....	216	120
Total require- ments.			2, 376	1, 320
Deductions:				
Estimated quan- tity on hand July 1, 1919.			2, 376	1, 320
Total deductions			2, 376	1, 320

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
 Tables of Organization, 1918.

Date, Nov. 29, 1918.

Form F 1.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.  
FISCAL YEAR 1920.

PURCHASE. STORAGE AND TRAFFIC. Item No. 275.

REMOUNT DIVISION.

Appropriation: H. C. A. & E. Item name: Horses for United States Military Academy.

	Strength.	Working basis.*	Requirements.	
			Draft.	Riding.
Initial equipment.....			140	200
Maintenance.....		10 per cent.....	14	20
Total require- ments.			154	220
Deductions:				
Estimated quan- tity on hand July 1, 1919.			154	220
Total deductions			154	220

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Authority, Secretary of War, dated October 20, 1914. (A. G. O. 2, 145, 188.)

Date, Nov. 29, 1918.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE, AND TRAFFIC.

Item No. 276.

**REMOUNT DIVISION.***Appropriation:* H. C. A. & E.*Item name:* Horses for service schools and staff colleges.

	Strength.	Working basis.*	Requirements.
Initial equipment . . . . .			314
Maintenance . . . . .		10 per cent . . . . .	31

Total requirements . . . . . 345

**Deductions:**

Estimated quantity on hand July 1, 1919 . . . . . 345

Total deductions . . . . . 345

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

Date, Nov. 29, 1918.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE, AND TRAFFIC.

Item No. 277.

**REMOUNT DIVISION.***Appropriation:* H. C. A. & E.*Item name:* Horses for Indian scouts.

Total requirements: No estimate.

Date, Nov. 29, 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.  
FISCAL YEAR 1920.

PURCHASE, STORAGE, AND TRAFFIC. Item No. 278.  
REMOUNT DIVISION.

Appropriation: Item name: Horses for Infantry, mounted.

	Strength.	Working basis.*	Requirements.
Initial equipment . . .	20 combat divs., 4 base depot divs.	356 per division . . . . .	7, 120
Maintenance . . . . .	.....	10 per cent of 7,120 . . .	712

Total requirements..... 7, 832

Deductions:  
Estimated quantity on hand July 1, 1919..... 7, 832  
Total deductions..... 7, 832

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Tables of Organization, 1918.  
Date, Nov. 29, 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE, AND TRAFFIC. Item No. 279.

REMOUNT DIVISION.

Appropriation: H. C. A. & E. Item name: Horses for Hospital Corps.

	Strength.	Working basis.*	Requirements.
Initial equipment....	20 combat divs., 4 base depot divs.	49 per div.....	980
Total requirements.....			980
Deductions:			
Estimated quantity on hand July 1, 1919.....			980
Total deductions.....			980

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
Tables of Organization, 1918.

Date, Nov. 29, 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE, AND TRAFFIC. Item No. 280.

REMOUNT DIVISION.

Appropriation: H. C. A. & E. Item name: Expenses incident to purchase.

Total cost of net requirements.....	\$3,300
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2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:  
Cost is based on hire of attendants to accompany 1,500 remounts from place of purchase to destination, averaging \$2.20 per animal, which was the cost for fiscal year 1919.

5. REMARKS:  
This item covers the cost of hiring attendants to accompany animals from place of purchase to destination at \$4 per day.

Date, 1-6-19.



BARRACKS AND QUARTERS.

Item.	Amount.	Division making estimate.
282. Construction of barracks.....		Construction.
283. Construction of quarters.....		Do.
284. Construction of stables.....		Do.
285. Construction of storehouses.....		Do.
286. Construction of magazines.....		Do.
287. Construction of administration buildings.....		Do.
288. Construction of office buildings.....		Do.
289. Construction of sheds.....		Do.
290. Construction of shops.....		Do.
291. Construction of other necessary buildings.....		Do.
291a. Construction of temporary shelter.....	84,272,090	Do.
292. Repairing public buildings.....	24,000,000	Do.
Rentals:		
Quarters—		
294. Officers.....	150,000	Do.
294a. Acting dental surgeons.....		Do.
295. Barracks.....	79,250	Do.
296. Noncommissioned officers and enlisted men.....		Do.
Grounds—		
297. Cantonments.....	5,000	Do.
298. Camp sites.....	3,000,000	Do.
299. Other military purposes.....	49,500	Do.
Buildings—		
300. Buildings or portions of.....	63,000	Do.
301. Stables.....	375,000	Do.
302. Storehouses.....	2,633,500	Do.
303. Offices.....	1,500,000	Do.
304. Other military purposes.....	251,250	Do.
Hire of:		
305. Recruiting stations.....	110,000	Do.
306. Lodgings for recruits.....	134,068	Do.
307. Furniture for public rooms.....	100,000	Do.
308. Wall lockers in permanent barracks.....	50,000	Do.
309. Refrigerators in barracks and quarters.....	60,000	Do.
Barracks, offices, and quarters:		
310. Screen doors.....	355,300	Do.
311. Window screens.....	1,000,000	Do.
312. Storm doors and sash.....	18,000	Do.
313. Window shades.....	7,250	Do.
314. Flooring and framing for tents.....		Do.
Total.....	38,213,208	

FORM F 2. GROUP No. 5.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE, FISCAL YEAR 1920.

Item No. 291a.

*Item name:* Temporary shelter.*Appropriation:* Barracks and quarters.

Total estimated cost: \$4,272,090.

Total required: \$4,272,090.

**Explanation:**

Under this heading it is intended to include all the construction that will be necessary under items 282 to 291a, inclusive. Without further information as to the localities in which the contemplated number of men are to be housed, it is impossible to make an estimate divided into the usual items.

The amount asked for, \$4,272,090, is what is considered to be necessary for minor extensions and small buildings added for special purposes to camps and posts already existing. The necessity for such work is constantly arising, and while the list of projects, which seem absolutely necessary at the present time, only amounts to \$300,000, it is sure to develop that many such items of construction will be necessary to properly care for the number of men which the revised program provides for.

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FORM F 2. GROUP No. 13.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE, FISCAL YEAR 1920.

Item No. 292.

*Item name:* Repairing public buildings at military posts.*Appropriation:* Barracks and quarters.

Total estimated cost: \$24,000,000.

Total required: \$24,000,000.

**Explanation:**

It is estimated that the value of the buildings now existing at various military posts is about \$240,000,000. Owing to the fact that these buildings are of a temporary construction, it is estimated that 10 per cent of the cost will be necessary for maintenance and repair during each year. The amount included under this item is therefore \$24,000,000.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**FACILITIES DEPARTMENT.**

**PURCHASE, STORAGE, AND TRAFFIC DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 294.**

*Item name:* Rental of quarters for officers.

*Appropriation:* Barrack and quarters, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$150,000.

Total required: \$150,000.

Cost based on 50 per cent of amount authorized for fiscal year 1919.

**Explanation:**

These figures are estimated at 50 per cent decrease.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**FACILITIES DEPARTMENT.**

**PURCHASE, STORAGE, AND TRAFFIC DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 294a.**

*Item name:* Quarters for acting dental surgeons.

*Appropriation:* Barracks and quarters, general appropriation of the Quartermaster Corps, 1920.

**Explanation:**

There is no record in this office of any rentals for these purposes.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**FACILITIES DEPARTMENT.**

**PURCHASE, STORAGE, AND TRAFFIC DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 295.**

*Item name:* Rental of barracks.

*Appropriation:* Barracks and quarters, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$79,250.

Total required: \$79,250.

Cost based on leases on file in this office.

**Explanation:**

Rentals for barracks are in effect for considerably over \$100,000 at the present time. It is estimated that many of these barracks will have to be retained for the fiscal year 1920, especially at ports of embarkation.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**  
**FACILITIES DEPARTMENT.**

PURCHASE, STORAGE AND TRAFFIC DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 296.

*Item name:* Quarters for noncommissioned officer and enlisted men.*Appropriation:* Barracks and quarters, general appropriation of the Quartermaster Corps, 1920.**Explanation:**

There is no record in this office of any rentals for this specific purpose.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**  
**FACILITIES DEPARTMENT.**

PURCHASE, STORAGE, AND TRAFFIC DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 297.

*Item name:* Rental of cantonments.*Appropriation:* Barracks and quarters, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$5,000.

Total required: \$5,000.

Cost based on leases effective.

**Explanation:**

There is no way of estimating at the present time whether these lands will be leased or purchased during the fiscal year 1920. Estimate has, therefore, been made in case the leases are to be renewed for the fiscal year 1920.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**  
**FACILITIES DEPARTMENT.**

PURCHASE, STORAGE, AND TRAFFIC DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 298.

*Item name:* Rental of camp sites.*Appropriation:* Barracks and quarters, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$3,000,000.

Total required: \$3,000,000.

Cost based on rentals and possible damages involved in terminating leases.

**Explanation:**

The sum of \$9,031,200 was appropriated for the fiscal year 1919. These figures, however, contemplated the purchase of several camps and cantonments.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**FACILITIES DEPARTMENT.**

**PURCHASE, STORAGE, AND TRAFFIC DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 299.

*Item name:* Rental of grounds for other military purposes.

*Appropriation:* Barracks and quarters, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$49,500.

Total required: \$49,500.

Cost based on 50 per cent of amount appropriated for the fiscal year 1919.

**Explanation:**

It is estimated that a reduction of 50 per cent can be made on this item for the fiscal year 1920.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**FACILITIES DEPARTMENT.**

**PURCHASE, STORAGE, AND TRAFFIC DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 300.

*Item name:* Rental of buildings or portions of buildings.

*Appropriation:* Barracks and quarters, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$63,000.

Total required: \$63,000.

Cost based on 50 per cent of amount appropriated for fiscal year 1919.

**Explanation:**

It is estimated that a reduction of 50 per cent can be made on this item for the fiscal year 1920.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**FACILITIES DEPARTMENT.**

**PURCHASE, STORAGE, AND TRAFFIC DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 301.

*Item name:* Rental of stables.

*Appropriation:* Barracks and quarters, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$375,000.

Total required: \$375,000.

Cost based on 50 per cent of amount appropriated for the fiscal year 1919.

**Explanation:**

It is estimated that a reduction of 50 per cent can be made on this item for the fiscal year 1920, but consideration should be taken of the fact that debarkation and mustering out of troops will be continued well into the fiscal year 1920.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****FACILITIES DEPARTMENT.****PURCHASE, STORAGE, AND TRAFFIC DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 302.

*Item name:* Rental of storehouses.*Appropriation:* Barracks and quarters, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$2,633,500.

Total required: \$2,633,500.

Cost based on same as the fiscal year 1919.

**Explanation:**

These figures are submitted due to the fact that this amount has been greatly overspent for the fiscal year 1919. The director of storage has ruled that storage space for assembling plants, reclamation depots, etc., are not payable from the appropriation "Inland and port storage and shipping facilities," therefore rentals for numerous large storage projects must be paid from this item.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****FACILITIES DEPARTMENT.****PURCHASE, STORAGE AND TRAFFIC DIVISION.**

ANNUAL ESTIMATE, FISCAL YEAR 1920.

Item No. 303.

*Item name:* Rental of offices.*Appropriation:* Barracks and quarters, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$1,500,000.

Total required: \$1,500,000.

Cost based on leases effective at the present time.

**Explanation:**

There are numerous office buildings in which very large rental is involved which will undoubtedly be required for the fiscal year 1920. such as various department offices as well as the offices at the ports of embarkation, while a very large percentage of the smaller offices under lease will not be required. It is estimated that the full amount of \$1,500,000 will be required to cover the rentals as covered by this item.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**FACILITIES DEPARTMENT.**

**PURCHASE, STORAGE AND TRAFFIC DIVISION.**

**ANNUAL ESTIMATE, FISCAL YEAR 1920.**

**Item No. 304.**

*Item name:* Rental of buildings for other military purposes.

*Appropriation:* Barracks and quarters, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$251,250.

Total required: \$251,250.

Cost based on miscellaneous leases effective.

**Explanation:**

Due to the various new bureaus of the Military Establishment that required buildings and have no funds at their disposal to cover the rental involved and due to the probability that these bureaus will probably be in existence during the fiscal year 1920, this estimate is submitted to cover their requirements.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**REAL ESTATE SECTION.**

**PURCHASE, STORAGE AND TRAFFIC DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 305.**

*Item name:* Hire of recruiting stations.

*Appropriation:* Hire of recruiting stations, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$110,000.

Total required: \$110,000.

**Explanation:**

This amount has been estimated upon recruiting for 375,000 men. The amount allotted for this purpose for the fiscal year 1919 was \$200,000, figuring on recruiting on a 500,000 men basis.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**REAL ESTATE SECTION.**

**PURCHASE, STORAGE AND TRAFFIC DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 306.**

*Item name:* Hire of lodgings for recruits.

*Appropriation:* Lodgings for recruits, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$134,068.

Total required: \$134,068.

**Explanation:**

This amount has been estimated upon recruiting for 375,000 men. The amount allotted for this purpose for the fiscal year 1919 was \$243,774, figuring on recruiting on a 500,000 men basis.

FORM F 2. GROUP No. 31.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 307.

*Item name:* Furniture for public rooms of officers' mess quarters, etc.*Appropriation:* Barracks and quarters.

Total estimated cost: \$100,000.

Total required: \$100,000.

**Explanation:**

This is the same amount that was appropriated in the regular Army bill for the fiscal year 1919.

---

FORM F 2. GROUP No. 31.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 308.

*Item name:* Wall lockers in permanent barracks.*Appropriation:* Barracks and quarters.

Total estimated cost: \$50,000.

Total required: \$50,000.

**Explanation:**

This is the same amount that was appropriated in the regular Army bill for the fiscal year 1919.

---

FORM F 2. GROUP No. 31.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 309.

*Item name:* Refrigerators in barracks and quarters.*Appropriation:* Barracks and quarters.

Total estimated cost: \$60,000..

Total required: \$60,000.

**Explanation:**

This is the same amount that was appropriated in the regular Army bill for the fiscal year 1919.



FORM F 2. GROUP No. 31.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 310.**

*Item name:* Screen doors for barracks, offices, and quarters.

*Appropriation:* Barracks and quarters.

*Total estimated cost:* \$355,300.

*Total required:* \$355,300.

**Explanation:**

This is the same amount that was appropriated in the regular Army bill for the fiscal year 1919.

---

FORM F 2. GROUP No. 31.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 311.**

*Item name:* Window screens for barracks and quarters.

*Appropriation:* Barracks and quarters.

*Total estimated cost:* \$1,000,000.

*Total required:* \$1,000,000.

**Explanation:**

This is the same amount that was appropriated in the Regular Army bill for the fiscal year 1919.

FORM F 2. GROUP No. 31.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 312.

*Item name:* Storm doors and sash for barracks, quarters.*Appropriation:* Barracks and quarters.

Total estimated cost: \$18,000.

Total required: \$18,000.

**Explanation:**

This is the same amount that was appropriated in the Regular Army bill for the fiscal year 1919.

---

FORM F 2. GROUP No. 31.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 313.

*Item name:* Window shades for barracks, quarters.*Appropriation:* Barracks and quarters.

Total estimated cost: \$7,250.

Total required: \$7,250.

**Explanation:**

This is the same amount that was appropriated in the Regular Army bill for the fiscal year 1919.

## MILITARY POST EXCHANGES.

Item.	Amount.	Division making estimate.
315. Construction .....	100,000	C. T. C. A.
315. Construction .....	100,000	Construction.
316. Equipment.....	1,150,000	C. T. C. A.
316. Equipment.....	486,450	Construction.
317. Maintenance of buildings .....	150,000	C. T. C. A.
317. Maintenance of buildings .....	240,000	Construction.
318. Repair of buildings erected at private cost .....	125,000	Do.
319. Rental of films .....	80,500	Do.
320. Purchase of slides.....	76,460	Do.
321. Supplies for making repairs to moving picture outfits.....	63,285	Do.
<b>Total.....</b>	<b>2,571,695</b>	

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****COMMISSION ON TRAINING CAMP ACTIVITIES.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 315.

*Item name:* Construction of Liberty theaters.*Appropriation:* Military post exchanges.

Total estimated cost: \$100,000.

**Explanation:**

Providing for the construction of theaters needed to supplement the 34 now completed and in operation.

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FORM F 2. GROUP NO. 6.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 315.

*Item name:* Construction of buildings for post exchanges, etc.*Appropriation* Military post exchanges.

Total estimated cost: \$100,000.

Total required: \$100,000.

**Explanation:**

The amount estimated for the fiscal year 1919 under this item was \$1,068,367.

Form F 2.

ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.

WAR DEPARTMENT.

COMMISSION ON TRAINING CAMP ACTIVITIES.

ANNUAL ESTIMATE FISCAL YEAR 1920. Item No. 316.

Item name: Equipment, supplies, and salaries.

Appropriation: Military post exchanges.

Total estimated cost: \$1,150,000.

Explanation:

a) Providing for the purchase of athletic, musical, and dramatic equipment for the recreation of 500,000 men in service, at a per capita of \$1...	\$500,000
b) Salaries of civilian personnel to supplement the work of commissioned officers in providing recreation for men in service (see schedule attached)	500,000
c) Printing, travel, equipment, supplies, and other expenses of civilian personnel	150,000
	1,150,000

MILITARY POST EXCHANGES.

Estimates for fiscal year 1920 for the Commission on Training Camp Activities.

SCHEDULE OF SALARIES.

[Revised to Dec. 23, 1918.]

Class of employee.	Rate.	Number.	Total salaries.
1. Athletic directors and instructors	\$2,400	10	\$24,000
Do.	1,800	5	9,000
2. Song leaders and band-music instructors	2,400	10	24,000
Do.	1,800	5	9,000
3. Theater managers	2,400	10	24,000
Assistant theater managers	1,500	10	15,000
4. Dramatic directors	2,400	10	24,000
5. Agents, lecturers, and other field workers	2,400	10	24,000
Do.	1,800	10	18,000
Do.	1,500	5	7,500
Do.	1,200	5	6,000
Total field workers on annual roll		90	184,500
6. Personal services of lecturers, instructors, inspectors, and entertainers on per diem basis			198,200
7. Office force in Washington and branch offices:			
Chief clerk	2,400	1	2,400
Assistant chief clerk	1,800	2	3,600
District supervisors	2,400	5	12,000
Accountants and bookkeepers	2,400	3	7,200
Do.	1,800	2	3,600
Do.	1,500	2	3,000
Private secretaries	2,000	3	6,000
Do.	1,800	3	5,400
Do.	1,500	6	9,000
Stenographers	1,800	3	5,400
Do.	1,500	6	9,000
Do.	1,400	4	5,600
Do.	1,200	10	12,000
Do.	1,000	5	5,000
Typists	1,200	5	6,000
Do.	1,000	2	2,000
Do.	900	2	1,800
Clerks	1,800	2	3,600
Do.	1,500	2	3,000
Do.	1,200	2	2,400
Do.	900	5	4,500
Messengers	1,200	1	1,200
Do.	540	5	2,700
Charwomen	300	3	900
Total office force		84	117,300
Grand total of salaries			500,000

FORM F 2. GROUP 32.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 316.

*Item name:* Equipment (for post exchange, schools, library, reading, lunch, amusement rooms, and gymnasium).*Appropriation:* Military post exchanges.

Total estimated cost: \$486,450.

Total required: \$486,450.

**Explanation:**

It is estimated that it will be necessary to expend for the above purpose the sum of \$486,450, which is one-half the amount appropriated by the Army bill for the fiscal year 1919.

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FORM F 2.**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

COMMISSION ON TRAINING CAMP ACTIVITIES.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 317.

*Item name:* Maintenance and repair of Liberty theaters.*Appropriation:* Military post exchange.

Total estimated cost: \$150,000.

**Explanation:**

Providing for maintenance, repair, and possible reconstruction of 34 theaters.

---

FORM F 2. GROUP No. 14.**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 317.

*Item name:* Maintenance of military post exchanges.*Appropriation:* Military post exchanges.

Total estimated cost: \$240,000.

Total required: \$240,000.

**Explanation:**

It is estimated that there have been erected at the various posts and camps which will be maintained under the revised program buildings which originally cost about \$2,400,000. It is estimated that the cost of maintenance and repair for these buildings will be 10 per cent, or \$240,000.

**FORM F 2. GROUP No. 14.**

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 318.**

*Item name:* Repair to buildings erected at private cost, etc.

*Appropriation:* Military post exchanges.

*Total estimated cost:* \$125,000.

*Total required:* \$125,000.

**Explanation:**

At the various camps and posts there have been numerous buildings erected at private cost which are available for use under the future organization and which it seems desirable that the Government maintain. It is estimated that there are 250 of these buildings at points where detachments will be maintained and that it will be necessary to expend an average of \$500 for the repair and maintenance of each building, or a total of \$125,000.

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**FORM F 2. GROUP No. 32.**

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 319.**

*Item name:* Moving-picture film, rental of.

*Appropriation:* Military post exchanges.

*Total estimated cost:* \$80,500.

*Total required:* \$80,500.

**Explanation:**

This is the same amount that was included in the appropriation for the fiscal year 1919.

FORM F 2. GROUP No. 32.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 320.

*Item name:* Purchase of slides.*Appropriation:* Military post exchanges.

Total estimated cost: \$76,460.

Total required: \$76,460.

**Explanation:**

This is the same amount that was included in the appropriation for the fiscal year 1919.

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FORM F 2. GROUP No. 32.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 321.

*Item name:* Supplies for making repairs to moving-picture outfits.*Appropriation:* Military post exchanges.

Total estimated cost: \$63,285.

Total required: \$63,285.

**Explanation:**

This is the same amount that was included in the appropriation for the fiscal year 1919.



**ROADS, WALKS, WHARVES, AND DRAINAGE.**

Item.	Amount.	Division making estimate.
Roads:		
322. Construction .....	\$1,407,621	Construction.
322a. Repair of .....	2,100,000	Do.
Walks:		
323. Construction .....	166,665	Do.
323a. Repair of .....	306,217	Do.
Wharves:		
324. Construction .....	632,675	Do.
324a. Repair of .....	864,000	Do.
326. Drainage, disposal of .....	136,457	Do.
326. Drainage, disposal of .....	8,000	Do.
327. Dredging channels .....	49,734	Do.
328. Care and improvement of grounds .....	623,580	Do.
Total .....	6,293,949	

FORM F 2. GROUP No. 7.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 322.

*Item name:* Roads, construction of.*Appropriation:* Roads, walks, wharves, and drainage.

Total estimated cost: \$1,407,621.

Total required; \$1,407,621.

**Explanation:**

It is anticipated that there will be no great amount of construction under this heading during the year 1920. The work will be confined principally to extensions within posts and possibly to main lines of travel to make the post more accessible to the adjacent towns or to railroad connections.

The amount asked for under this item is \$1,407,621. The amount appropriated for the fiscal year 1919 was \$28,152,431.

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FORM F 2. GROUP No. 15.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 322a.

*Item name:* Roads, repair of.*Appropriation:* Roads, walks, wharves, and drainage.

Total estimated cost: \$2,100,000.

Total required: \$2,100,000.

**Explanation:**

The amount asked for, namely, \$2,100,000, is estimated for on the assumption that one-half of the so-called temporary posts will be maintained during the fiscal year 1920, and that also the comparatively large amount of construction which was done at the regular posts will have deteriorated to such an extent that considerable repairs will be necessary.

The amount asked for and appropriated for the fiscal year 1919 was \$5,017,725.

FORM F 2. GROUP No. 7.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 323.**

*Item name:* Walks, construction of.

*Appropriation:* Roads, walks, wharves, and drainage.

**Total estimated cost: \$166,665.**

**Total required: \$166,665.**

**Explanation:**

The amount asked for under this item, namely, \$166,665, is estimated to cover the cost of building walks within the limits of camps which may be continued as semipermanent posts.

There was appropriated for the fiscal year 1919, \$1,666,655.

---

FORM F 2. GROUP No. 15.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 323-a.**

*Item name:* Walks, repair of.

*Appropriation:* Roads, walks, wharves, and drainage.

**Total estimated cost: \$305,217.**

**Total required: \$305,217.**

**Explanation:**

The amount requested for the fiscal year 1920, \$305,217, is the same amount that was appropriated for the fiscal year 1919.

---

FORM F 2. GROUP No. 7.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE, FISCAL YEAR 1920.**

**Item No. 324.**

*Item name:* Wharves, construction of.

*Appropriation:* Roads, walks, wharves, and drainage.

**Total estimated cost: \$632,675.**

**Total required: \$632,675.**

**Explanation:**

The amount asked for the fiscal year 1920, \$632,675, is the same that was appropriated for the fiscal year 1919.

FORM F 2. GROUP No. 15.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE, FISCAL YEAR 1920.

Item No. 324a.

*Item name:* Wharves, repair of.*Appropriation:* Walks, wharves, and drainage.

Total estimated cost: \$864,000.

Total required: \$864,000.

**Explanation:**

It is estimated that there will be required for the repair of various wharves under the charge of this division the sum of \$864,000.

This is the same amount that was estimated and appropriated for the fiscal year 1919.

FORM F 2. GROUP No. 7.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 326.

*Item name:* Drainage, disposal of.*Appropriation:* Road, walks, wharves, and drainage.

Total estimated cost: \$136,457.

Total required: \$136,457.

**Explanation:**

If any of the camps are to be converted into permanent or semi-permanent posts it will undoubtedly be found necessary to do a certain amount of drainage work in the way of extra catch basins in the camps which were not considered necessary when the work was being done as a temporary measure.

The amount included in this item is 10 per cent of the amount included in the same item for the fiscal year 1919.

FORM F 2. GROUP No. 15.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 326.

*Item name:* Drainage.*Appropriation:* Roads, walks, wharves, and drainage.

Total estimated cost: \$8,000.

Total required: \$8,000.

**Explanation:**

This is the same amount that was asked for and appropriated for the fiscal year 1919.

FORM F 2. GROUP No. 7.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 327.

*Item name:* Dredging channels.

*Appropriation:* Roads, walks, wharves, and drainage.

Total estimated cost: \$49,734.

Total required: \$49,734.

Explanation:

This is the same amount that was appropriated for the fiscal year 1919.

---

FORM F 2. GROUP No. 15.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 328.

*Item name:* Care and improvement of grounds.

*Appropriation:* Roads, walks, wharves, and drainage.

Total estimated cost: \$623,580.

Total required: \$623,580.

Explanation:

This is the amount that was asked for and appropriated for use during the fiscal year 1919.



**BARRACKS AND QUARTERS, PHILIPPINE ISLANDS.**

Item.	Amount.	Division mak- ing estimate.
329. Shelter and protection of officers and enlisted men.....	\$3,698,050	Construction.
330. Repairs.....	360,000	Do.
331. Payment of rents.....	59,930	Do.
332. Building sites.....	.....	Do.
333. Additions to existing military reservations.....	10,000	Do.
334. Shelter for animals and supplies.....	48,800	Do.
335. All other buildings.....	90,050	Do.
Total.....	4,266,830	

FORM F 2. GROUP No. 20.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 329.

*Item name:* Shelter and protection of officers and enlisted men.*Appropriation:* Barracks and quarters, Philippine Islands.

Total estimated cost: \$3,698,050.

Total required: \$3,698,050.

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.

---

FORM F 2. GROUP No. 20.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 330.

*Item name:* Repairs to shelter and protection of officers and enlisted men.*Appropriation:* Barracks and quarters, Philippine Islands.

Total estimated cost: \$360,000.

Total required: \$360,000.

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.

---

FORM F 2. GROUP No. 20.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 331.

*Item name:* Payment of rents.*Appropriation:* Barracks and quarters, Philippine Islands.

Total estimated cost: \$59,930.

Total required: \$59,930.

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.



FORM F 2. GROUP No. 20.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 332.

*Item name:* Building sites.

*Appropriation:* Barracks and quarters, Philippine Islands.

**Explanation:**

Nothing is called for under this item.

---

FORM F 2. GROUP No. 20.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 333.

*Item name:* Addition to existing military reservations.

*Appropriation:* Barracks and quarters, Philippine Islands.

Total estimated cost: \$10,000.

Total required: \$10,000.

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.

---

FORM F 2. GROUP No. 20.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 334.

*Item name:* Shelter for animals and supplies.

*Appropriation:* Barracks and quarters, Philippine Islands.

Total estimated cost: \$48,800.

Total required: \$48,800.

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.

FORM F 2. GROUP No. 20.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 335.***Item name:* All other buildings.*Appropriation:* Barracks and quarters, Philippine Islands.**Total estimated cost: \$90,050.****Total required: \$90,050.****Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.

## CONSTRUCTION AND REPAIR OF HOSPITALS.

Item.	Amount.	Division making estimate.
Hospitals at military posts already established and occupied:		
336. Construction.....	\$614,000	Construction.
337. Repair.....	3,750,000	Do.
338. Extra-duty pay of enlisted men.....		Do.
Army and Navy General Hospital at Hot Springs, Ark.:		
339. Construction, expenditures for.....		Do.
340. Repairs, expenditures for.....	10,000	Do.
General hospitals:		
341. Construction.....	1,000,000	Do.
342. Repairs.....		Do.
343. Expenses incident thereto.....		Do.
343a. Rentals or purchase of grounds for hospitals.....	5,000,000	Do.
343b. Rentals of buildings for use of hospitals and hospital stewards.....	200,000	Do.
344. Additions to hospitals.....		Do.
345. Temporary hospitals.....		Do.
345a. Repair of temporary hospitals.....		Do.
345b. Veterinary hospitals at camps and cantonments.....		Do.
Total.....	10,574,000	

FORM F 2. GROUP No. 9.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 336.

*Item name:* Construction of hospitals at military posts already established and occupied.*Appropriation:* Construction and repair of hospitals.

Total estimated cost, \$614,000.

Total required, \$614,000.

**Explanation:**

The estimate for the sum of \$614,000 will be necessary for construction work under this heading during the fiscal year 1920. The amount asked for in estimate fiscal year 1919 was \$3,614,000 for this same item.

---

FORM F 2. GROUP No. 18.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 337.

*Item name:* Repair of hospitals at military posts already established and occupied.*Appropriation:* Construction and repair of hospitals.

Total estimated cost, \$3,750,000.

Total required, \$3,750,000.

**Explanation:**

It is estimated that the total amount appropriated will maintain for the fiscal year 1920 the hospitals the original construction of which cost approximately \$37,500,000. This maintenance item is based on 10 per cent, being necessary for the repairs and maintenance.

---

FORM F 2. GROUP No. 9.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 339.

*Item name:* Construction required at the Army and Navy General Hospital, Hot Springs, Ark.*Appropriation:* Construction and repair hospitals.**Explanation:**

Nothing is asked for on this item.

FORM F 2. GROUP No. 18.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 340.

*Item name:* Repair at Army and Navy General Hospitals, Hot Springs, Ark.

*Appropriation:* Construction and repair of hospitals.

Total estimated cost: \$10,000.

Total required: \$10,000.

**Explanation:**

This is the same amount estimated and appropriated for use during the fiscal year 1919.

---

FORM F 2. GROUP No. 9.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 341.

*Item name:* Construction of general hospitals.

*Appropriation:* Construction and repair of hospitals.

Total estimated cost: \$1,000,000.

Total required: \$1,000,000.

**Explanation:**

This estimate of \$1,000,000 may be required for the construction of general hospitals at various points during the fiscal year 1920. This will be confined to the construction of minor extensions and of buildings for special purposes at hospitals already established and in operation.

---

FORM F 2. GROUP No. 18.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE, FISCAL YEAR 1920.

Item No. 342.

*Item name:* General hospitals, repairs.

*Appropriation:* Construction and repair of hospitals.

**Explanation:**

Nothing is estimated for under this item for the reason that this division can not determine at this time which hospitals will be maintained; whether those at military posts or those at general hospitals. Therefore, the amount estimated under the item 337 is the total amount that is considered necessary for the maintenance and repair of all hospitals, except at Hot Springs, Ark., to be maintained during the fiscal year 1920.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****FACILITIES DEPARTMENT.****PURCHASE, STORAGE, AND TRAFFIC DIVISION.****ANNUAL ESTIMATE, FISCAL YEAR 1920.****- Item No. 343a.***Item name:* Rental or purchase of grounds for hospital.*Appropriation:* Rental or purchase of grounds and buildings for hospitals, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$5,000,000.

Total required: \$5,000,000.

Cost based on leases effective that will probably be required for the fiscal year 1920.

**Explanation:**

In the 1919 Army appropriation bill nothing was allotted for rentals, but a certain amount was figured on by the construction division for this purpose. In the 1919 deficiency bill a sum of \$15,649,930 was requested for the rental of hospital buildings and grounds to be used, on which hospitals were to be constructed, as well as rentals of buildings for hospital personnel. At the present there are in existence leases for hospital and hospital purposes involving rentals of approximately \$2,300,000. It is the opinion of this office that most of this property and these buildings will be required for the fiscal year 1920. Besides the rental above mentioned, it is the opinion of this office that it will be found necessary to purchase many of these sites during the fiscal year 1920 in order to safeguard millions of Government construction thereon.

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FORM F 2.**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****FACILITIES DEPARTMENT.****PURCHASE, STORAGE, AND TRAFFIC DIVISION.****ANNUAL ESTIMATE, FISCAL YEAR 1920.****Item No. 343b.***Item name:* Rental of buildings for the hospital personnel.*Appropriation:* Rental of buildings for use of hospital personnel, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$200,000.

Total required: \$200,000.

Cost based on leases effective that will probably be required for the fiscal year 1920.

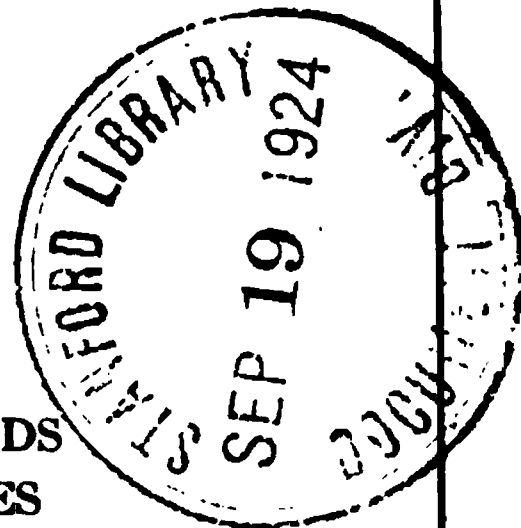






# ARMY APPROPRIATION BILL

1920



QUARTERS FOR HOSPITAL STEWARDS  
SHOOTING GALLERIES AND RANGES  
MAINTENANCE ARMY WAR COLLEGE  
RENT OF BUILDINGS, QUARTERMASTER CORPS  
CLAIMS FOR DAMAGE TO AND LOSS OF PRIVATE PROPERTY  
VOCATIONAL TRAINING  
RIFLE RANGES FOR CIVILIAN INSTRUCTION  
QUARTERMASTER SUPPLIES, EQUIPMENT, ETC., RESERVE  
OFFICERS' TRAINING CORPS  
QUARTERMASTER SUPPLIES FOR MILITARY EQUIPMENT  
OF SCHOOLS AND COLLEGES

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Printed for the use of the Committee on Military Affairs of the House

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PART 7



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1919



## QUARTERS FOR HOSPITAL STEWARDS.

Item.	Amount.	Division making estimate.
346. Construction of quarters.....	\$22,000.00	Construction.
347. Repair of quarters.....	22,500.00	Do.
348. Extra-duty pay.....		Do.
Total.....	44,500.00	

FORM F 2. GROUP No. 10.

### ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 346.

*Item name:* Quarters, construction of.

*Appropriation:* Quarters for hospital stewards.

Total estimated cost: \$22,000.

Total required: \$22,000.

Explanation:

This is the same amount that was appropriated for use during the fiscal year 1919.

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FORM F 2. GROUP No. 19.

### ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 347.

*Item name:* Quarter, repair of.

*Appropriation:* Quarters for hospital stewards.

Total estimated cost: \$22,500.

Total required: \$22,500.

Explanation:

This is the same amount that was appropriated for use during the fiscal year 1919.



## SHOOTING GALLERIES AND RANGES.

Item.	Amount.	Division making estimate.
349. Shelter .....	\$10,400	Construction.
350. Shooting galleries.....	1,500	Do.
351. Ranges, small-arms target practice.....	300,000	P. S. T.
351. Ranges, small-arms target practice.....	21,900	Construction.
352. Repair, incident thereto.....	272,000	Do.
353. Expenses, incident thereto.....	1,600	Do.
354. Flour for paste (for making targets).....	33,210	Do.
355. Hire of employees.....		Do.
Total.....	640,610	

FORM F 2. GROUP No. 8.

### ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 349.

*Item name:* Shelter for small-arms target practice.

*Appropriation:* Shooting galleries and ranges.

Total estimated cost: \$10,400.

Total required; \$10,400.

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.

FORM F 2. GROUP No. 8.

### ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 350.

*Item name:* Shooting galleries for small-arms target practice.

*Appropriation:* Shooting galleries and ranges.

Total estimated cost: \$1,500.

Total required: \$1,500.

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****FACILITIES DEPARTMENT.****PURCHASE, STORAGE AND TRAFFIC DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 351.

*Item name:* Rental of shooting galleries and ranges.*Appropriation:* Shooting galleries and ranges, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$300,000.

Total required: \$300,000.

Cost based on leases effective and damages that will be involved in canceling existing leases.

**Explanation:**

There are leases effective at the present time involving approximately \$250,000. A large amount of money will be required for damages in canceling existing leases, due to the terms of the leases, and due to the conditions under which most of these lands were taken, also due to the fact that these lands were seriously damaged due to rifle and artillery fire.

FORM F 2. GROUP No. 8.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 351.

*Item name:* Ranges for small-arms target practice.*Appropriation:* Shooting galleries and ranges.

Total estimated cost: \$21,900.

Total required: \$21,900.

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.

**RENT, MAINTENANCE, CLAIMS, MISCELLANEOUS EQUIPMENT. 695**

**FORM F 2. GROUP No. 16.**

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 352.**

*Item name:* Repair of shooting galleries and ranges.

*Appropriation:* Shooting galleries and ranges.

**Total estimated cost: \$272,000.**

**Total required: \$272,000.**

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.

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**FORM F 2.**

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 353.**

*Item name:* Expenses incident to shooting galleries and ranges.

*Appropriation:* Shooting galleries and ranges.

**Total estimated cost: \$1,600.**

**Total required: \$1,600.**

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 354.

*Item name:* Flour for paste.*Appropriation:* Shooting galleries and ranges.

Total estimated cost: \$33,210.

Total required: \$33,210.

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.



**MAINTENANCE ARMY WAR COLLEGE.**

Item.	Amount.	Division making estimate.
357. Lights.....	\$3,000	Construction.
358. Chief engineer.....	1,400	Personnel.
359. Assistant engineer.....	900	Do.
359a. Carpenter.....	1,000	Do.
360. Fireman.....	2,880	Do.
361. Elevator conductor.....	720	Do.
Total.....	9,900	

FORM F 2. GROUP No. 30.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**WAR DEPARTMENT.**

**CONSTRUCTION DIVISION.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 357.**

*Item name:* Light for the Army War College.

*Appropriation:* Maintenance Army War College.

**Total estimated cost: \$3,000.**

**Total required: \$3,000.**

**Explanation:**

This is the same amount that was appropriated for use during the fiscal year 1919.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

OFFICE QUARTERMASTER GENERAL.

Items No. 358 to 361.

PERSONNEL DIVISION.

*Appropriation:* Maintenance, Army War College.    *Item name:* Other employees.

Total cost of net requirements..... \$6, 900

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See attached statement.

OTHER EMPLOYEES.

ITEM 51.—*General appropriations, Quartermaster Corps.*

[Formerly paid from items 358 to 361, Maintenance, Army War College, Q. M. C.]

Designation.	Rate of pay.	Number of employees.	Amount.
Salary, chief engineer.....	\$1, 400	1	\$1, 400
Wages:			
Carpenter.....	1, 000	1	1, 000
Assistant engineer.....	900	1	900
Fireman.....	720	4	2, 880
Elevator conductor.....	720	1	720
Salaries.....			1, 400
Wages.....			5, 500
Total.....			6, 900

**RENT OF BUILDINGS, QUARTERMASTER CORPS.**

Item.	Amount.	Division making estimate.
362. Buildings and parts of buildings.....	\$226,496.04	<div> P. S. T. Do. Do. Do. </div>
363. Quarters for officers.....		
364. Quarters for noncommissioned officers.....		
365. Quarters for privates.....		
Total.....	226,496.04	

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**  
**FACILITIES DEPARTMENT.**

PURCHASE, STORAGE AND TRAFFIC DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

*Item name:* Rental of buildings in the District of Columbia.

*Appropriation:* Rental of buildings in the District of Columbia, general appropriation of the Quartermaster Corps, 1920.

Total estimated cost: \$226,496.04.

Total required: \$226,496.04.

Explanation:

This estimate is based upon leases effective at the present time. This office is not in a position to estimate whether all of these buildings will be required for the fiscal year 1920, and has, therefore, submitted the entire list.

Explanation:

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****FACILITIES DEPARTMENT.****PURCHASE, STORAGE AND TRAFFIC DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.***Item name:* Rental of buildings in the District of Columbia.*Appropriation:* Rental of buildings in the District of Columbia, general appropriations of the Quartermaster Corps, 1920.

Total estimated cost: \$226,496.04.

Total required: \$226,496.04.

**LIST OF BUILDINGS.**

	Per year.
Field Medical Supply Depot, square 673 .....	\$50,000. 00
Quartermaster stables and storehouse, Nineteenth and Virginia Avenue..	2,700. 00
Army Medical School, 458 Louisiana Avenue NW.....	2,400. 00
Army Medical School, 562-564 Louisiana Avenue NW.....	13,080. 00
Army Medical School, 472 Louisiana Avenue NW.....	4,500. 00
Office of the attending surgeon, 706 Connecticut Avenue NW.....	5,880. 00
Garage, Medical Corps, Third and Fourth, D and E Streets NE. (requisitioned).....	1,410. 00
Central Disbursing Division, Director of Finance, Lemon Building.....	7,200. 00
Depot quartermaster, 532 Seventeenth Street NW.....	3,000. 00
Garage, Quartermaster Corps, for motorcycles, 1806 E Street NE.....	1,200. 00
Quartermaster Corps warehouse and stable, 1514 Eckington Place NE....	4,938. 00
Quartermaster Corps stable, garage, and warehouse, Nineteenth and Virginia Avenue.....	6,000. 00
Quartermaster salesroom for officers' equipment, etc., 1226 to 1230 Connecticut Avenue.....	18,000. 00
Bunk and mess houses for laborers, Quartermaster Corps, Fourteenth and Luson Streets.....	1,200. 00
Allotment Branch, Director of Finance, Eighth and E Streets NW.....	8,000. 00
Motor Ambulance Section, Experimental Station, Office of the Surgeon General, 1210 D Street NW.....	2,400. 00
Warehouse of the purchasing quartermaster, Maryland Avenue between Twelfth and Water Streets.....	22,362. 00
Laboratory, Signal Corps, 1710 Pennsylvania Avenue.....	2,100. 00
Motor Transport Corps, Union Station Building.....	13,226. 04
Garage, Motor Transport Corps (formerly Department Military Aeronautics), Fourteenth Street (requisitioned).....	7,200. 00
Quartermaster mechanical repair shop, Patterson tract, Florida Avenue..	9,000. 00
Warehouse, storage of Government office supplies, northeast corner of First and K Streets NE.....	32,000. 00
Garage and warehouse, Quartermaster Corps, 205 Q Street and 141 Q Street NW.....	8,700. 00

**CLAIMS FOR DAMAGE TO AND LOSS OF PRIVATE PROPERTY.**

**OFFICE OF THE DIRECTOR OF FINANCE, CLAIMS BRANCH.**

*Estimates for fiscal year 1920.*

Claims for damage to and loss of private property . . . . . \$60, 000

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**OFFICE OF DIRECTOR OF FINANCE.**

**CLAIMS BRANCH, F. AND A.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

**Item No. 367.**

*Appropriation:* Claims for damages to and loss of private property.

Total estimated cost: \$60,000.

Authority:

“CLAIMS FOR DAMAGES TO AND LOSS OF PRIVATE PROPERTY: For payment of claims for damages to and loss of private property incident to the training, practice, operation, or maintenance of the Army that have accrued, or may hereafter accrue, from time to time, *including damages and losses resulting from accidents and other causes where there has been no negligence upon the part of the claimant,* to be immediately available and to remain available until expended: *Provided,* That settlement of such claims shall be made by the Auditor for the War Department, upon the approval and recommendation of the Secretary of War, where the amount of damages has been ascertained by the War Department and payment thereof will be accepted by the owners of the property in full satisfaction of such damages, \$60,000.”

NOTE.—The sum of \$30,000 for this purpose was appropriated in the Army act for fiscal year 1919. After using up the balances of the former appropriations there have already been approved and transmitted to the Auditor for the War Department for settlement claims aggregating approximately \$6,000. In view of the large increase about to be made in the Army, at least double the current appropriations will be required for the ensuing fiscal year.

The words printed in italics above constitute new matter. This change in the wording of the law is desired in order that there may be relief in meritorious cases of classes that might otherwise be ruled out on construction on strictly technical grounds.

CLAIMS FOR DAMAGES TO AND LOSS OF PRIVATE PROPERTY: For payment of claims for damages to and loss of private property incident to the training, practice, operation, or maintenance of the Army that have accrued, or may hereafter accrue, from time to time, *including damages and losses resulting from accidents and other causes where there*

*has been no negligence upon the part of the claimant*, to be immediately available and to remain available until expended: *Provided*, That settlement of such claims shall be made by the Auditor for the War Department, upon the approval and recommendation of the Secretary of War, where the amount of damages has been ascertained by the War Department and payment thereof will be accepted by the owners of the property in full satisfaction of such damages, \$60,000.

NOTE.—The sum of \$30,000 was approved by the Secretary of War, and amounts aggregating approximately \$5,750 have been transmitted to the Auditor for the War Department. In view of the large prospective increase of the Army, at least double the amount will be required for fiscal year 1920.

The words in italics in the item as above proposed are new matter, and this insertion is made in order to have authority for relief in meritorious cases of classes that would probably be otherwise ruled out under construction by the Judge Advocate General on technical grounds.

## VOCATIONAL TRAINING.

Item.	Amount.	Division making estimate.
367. Textbooks and tools.....	\$10, 500	Administrative. Do.
368. Equipment and machinery.....		
Total.....	10, 500	

**ESTIMATE FOR**

**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

**FISCAL YEAR 1920.**

**QUARTERMASTER CORPS.**

**Item No. 367.**

**ADMINISTRATIVE DIVISION.**

**Appropriation:** Vocational training (Q. M. C.).      **Item name:** Vocational training.

<b>Total requirements</b> .....	<b>\$10, 500</b>
<b>Total cost of net requirements</b> .....	<b>10, 500</b>

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

Under the provisions of the act approved July 9, 1918 (Army appropriation act, fiscal year 1919), \$75,000 was appropriated for the employment of instructors, procurement of tools, equipment, etc., for the vocational training of soldiers while in the active service. Based upon expenditures under this amount during the fiscal year 1919, it is estimated that \$10,500 will be sufficient for this purpose during the fiscal year 1920.





## RIFLE RANGES FOR CIVILIAN INSTRUCTION.

Item.	Amount.	Division making estimate.
369. Clerical service.....		Central Disbursing. Do. Do. Do.
370. Supplies and material.....		
371. Office supplies.....		
372. Traveling expenses.....	\$10,000.00	
Total.....	10,000.00	

FORM F 2.

## ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.

### BUREAU OF FINANCE.

#### CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 67.

*Item name:* Travel expenses, rifle ranges for civilian instruction.

Total estimated cost: \$10,000.

#### Explanation:

**RIFLE RANGES FOR CIVILIAN INSTRUCTION:** To establish and maintain indoor and outdoor rifle ranges for the use of all able-bodied males capable of bearing arms, under reasonable regulations to be prescribed by the National Board for Promotion of Rifle Practice and approved by the Secretary of War; for the employment of labor in connection with the establishment of outdoor and indoor rifle ranges, including labor in operating targets; for the employment of instructors; for clerical services; for badges and other insignia; for the transportation of employees, instructors, and civilians to engage in practice; for the purchase of materials, supplies, and services and for expenses incidental to instruction of citizens of the United States in marksmanship.

From informal advice received from the Director of Civilian Marksmanship, War Department, the amount required will be \$10,000, which is the same amount as appropriated under this item for the fiscal year 1919.



QUARtermaster supplies, equipment, etc., Reserve  
Officers' Training Corps.

Item.	Amount.	Division making estimate.
389. Commutation of rations.....	\$6,034,000	C. E. S. T.
390. Rations.....		
391. Fuel.....		
392. Light.....		
393. Rent for sites.....		
394. Mess and kitchen shelter.....		
395. Transportation.....		
396. Hire of teams.....		
397. Forage for animals.....		
398. Uniforms and equipage.....		
399. Water supply.....		
400. Stationery and forms.....		
401. Repairs, replacement, maintenance.....		
Total.....	6,034,000	

Quartermaster Corps, Committee on Education and Special Training.

Item Nos. 1, 2, 3, 4, and 5. Appropriation: Quartermaster supplies, equipment, etc., Reserve Officers' Training Corps.

1. Cost of maintenance of 80,000 men in basic course.....	\$200,000
2. Estimate of funds required for approximately 8,000 men in basic course who will attend summer camp.....	864,000
3. Estimate of funds required for 20,000 men in advanced course.....	2,660,000
4. Estimate of funds required for 20,000 men in advanced course attending summer camp.....	2,060,000
5. Water, lights, and incidentals.....	250,000
Total.....	6,034,000

Form F 2.

Estimate for Construction and Kindred Projects.

Quartermaster Corps.

Committee on Education and Special Training.

Annual Estimate Fiscal Year 1920. Item No. 1.

Item name: Cost of maintenance of 80,000 men in basic course.

Appropriation: Q. M. supplies, equipment, etc., R. O. T. C.

Total estimated cost: \$200,000.

Explanation:

Transportation on equipment for basic course for men not going to summer camp, per capita, \$2.50; total, \$200,000.

FORM F 2.

ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.  
QUARTERMASTER CORPS.

COMMITTEE ON EDUCATION AND SPECIAL TRAINING.

ANNUAL ESTIMATE FISCAL YEAR 1920. Item No. 2.

*Item name:* Estimate of funds required for approximately 8,000 men in basic course who will attend summer camp.

*Appropriation:* Quartermaster supplies, equipment, etc., R. O. T. C.

Total estimated cost: \$864,000.

*Explanation.*

	Per capita.	Total.
Pay for 8,000 men in basic course.....	\$45	\$360,000
Subsistence (at camp), at \$0.40.....	18	144,000
Mileage.....	40	320,000
Transportation on equipment.....	5	40,000
Total.....		864,000

FORM F 2.

ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.  
QUARTERMASTER CORPS.

COMMITTEE ON EDUCATION AND SPECIAL TRAINING.

ANNUAL ESTIMATE FISCAL YEAR 1920. Item No. 3.

*Item name:* Estimate of funds required for 20,000 men in advanced course.

*Appropriation:* Quartermaster supplies, equipment, etc., R. O. T. C.

Total estimated cost: \$2,660,000.

*Explanation.*

	Per capita.	Total.
Subsistence (commutation), 320 days, at \$0.40.....	\$128	\$2,560,000
Transportation on equipment.....	5	100,000
Total.....		2,660,000

Form F 2.

ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.

QUARTERMASTER CORPS.

COMMITTEE ON EDUCATION AND SPECIAL TRAINING.

ANNUAL ESTIMATE FISCAL YEAR 1920. Item No. 4.

Item name: Estimate of funds required for 20,000 men in advanced course attending summer camp.

Appropriation: Q. M. supplies, equipment, etc., R. O. T. C.

Total estimated cost: \$2,060,000.

Explanation.

	Per capita.	Total.
Pay for 20,000 men.....	\$45	\$900,000
Subsistence (at camp), at \$0.40 per day, 45 days.....	18	360,000
Mileage (average per man), 1,000 miles, at \$0.04 per mile.....	40	800,000
Total.....		2,060,000

Form F 2.

ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.

QUARTERMASTER CORPS.

COMMITTEE ON EDUCATION AND SPECIAL TRAINING.

ANNUAL ESTIMATE FISCAL YEAR 1920. Item No. 5.

Item name: Water, lights, and incidentals.

Appropriation: Q. M. supplies, equipment, etc., R. O. T. C.

Total estimated cost: \$250,000.

Explanation.

	Per capita.	Total.
20,000 men (camp).....	\$5	\$150,000
Overhead expenses of the committee for the administration of the R. O. T. C. for civilian employees, office rent, district headquarters, and incidentals.....		100,000
Total.....		250,000



**QUARTERMASTER SUPPLIES FOR MILITARY EQUIPMENT OF  
SCHOOLS AND COLLEGES.**

Item.	Amount.	Division making estimate.
402. Shelter tents, poles, and pins.....	\$100	C. E. S. T.
403. Heavy tentage and camp equipment.....		
404. Transportation charges.....		
Total.....	100	

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.  
QUARTERMASTER CORPS.**

COMMITTEE ON EDUCATION AND SPECIAL TRAINING.

ANNUAL ESTIMATE FISCAL YEAR 1920.

*Item name:* Supplies for schools and colleges.

*Appropriation:* Quartermaster supplies for military equipment of schools and colleges.

Total estimated cost: \$100.

**Explanation:**

For the procurement of supply as provided in section 56 of the act of Congress approved June 3, 1916, of such tentage and equipment, including the transportation of same, as the Secretary of War shall deem necessary for proper military training to schools and colleges other than those provided for in section 47 of the act above referred to.





# ARMY APPROPRIATION BILL

1920



INCIDENTAL EXPENSES AND  
WATER AND SEWERS

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Printed for the use of the Committee on Military Affairs of the House

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PART 8

WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1919





INCIDENTAL EXPENSES.

Division.	Item.	Appearing.
Washington Zone Finance Office.....	Items 166, 167, 231, 232.....	Col. P. L. Smith; Mr. Olsen.
Quartermaster Corps field personnel.....	Items 179-188, inclusive.....	Maj. Shawn.
Construction.....	Items 179, 183, 184, 248, 138, 355, 325, 293.	Gen. Marshall; Col. Gumby; Maj. French.
Administrative, Purchase and Storage..	Items 189a-j, 190, 191, 192, 201....	Capt. Pierce.
Remount.....	Item 281.....	Col. Hardiman.
Clothing and Equipage.....	Item 206a.....	
Subsistence.....	Item 110c.....	
Water Transport.....	Items 234e, 235e, 236e.....	Col. Bettison; Capt. Deming.
Motor Transport.....	Items 229F, 229J, 229M.....	

Incidental expenses.

Item.	Amount.	Division making estimate.
166. Postage.....	\$16,600.00	Central Disbursing.
167. Telegrams.....	280,550.00	Do.
167a. Cablegrams.....		Do.
Telephones:		
167b. Rents.....		Do.
167c. Tolls.....		Do.
Extra-duty pay:		
168. Quartermaster Corps.....		
168j. School-teachers.....		
169. Clerks at posts.....		
170. Overseers.....		
171. Disciplinary Barracks guards.....		Personnel.
172. Mess stewards.....		Do.
173. Cooks.....		
174. Instructor cooks.....		
175. Expresses.....		
176. Escorts.....		
177. Office furniture.....		General Supplies.
Hire of—		
179. Laborers.....	4,044,041.27	Personnel.
180. Interpreters.....	30,100.00	Do.
181. Spies.....	50,000.00	Do.
182. Guides.....	25,000.00	Do.
Compensation of—		
183. Clerks, Quartermaster Corps.....	5,813,847.78	Do.
184. Other employees, Quartermaster Corps.....	7,348,904.43	Do.
United States Disciplinary Barracks:		
185. Clerks.....	4,000.00	Do.
186. Foreman.....	22,708.50	Do.
187. Watchman.....		Do.
188. Organist.....	104.00	Do.
Recruiting service:		
189. Miscellaneous expenses.....		
189a. Baths.....		
189b. Bill posting.....		
189c. Advertising.....		
189d. Drayage.....		
189e. Ice.....		
189f. Laundry.....		
189g. Telephone service.....		
189h. Removal of garbage.....		
189i. Drinking water.....		
189j. Printing.....		
189k. Payment, postmasters.....		
189l. Payment to citizens.....		Do.
Apprehension of—		
190. Deserters.....	280,000.00	Do.
191. Escaped military prisoners.....		Do.
192. Donation to discharged prisoners.....	9,190.00	Do.
201. Additional expenditures.....	293,245.74	General Supplies.
201. Additional expenditures.....	10,000.00	Administrative.
355. Hire of employees.....	1,116.00	Construction.
325. Pay of employees.....	48,990.00	Do.
293. Hire of employees.....	289,527.40	Do.

Incidental expenses—Continued.

Item.	Amount.	Division making estimate.
281. Hire of employees.....	\$22,220.00	Remount.
266a. Hire of employees.....	3,338,523.78	Clothing and Equipage.
248. Hire of employees.....	367,419.20	Construction.
-110c. Hire of employees.....	10,100.00	Subsistence.
138. Hire of employees.....	4,020,987.80	Construction.
231. Hire of teamsters.....	142,371.70	Central Disbursing.
232. Hire of other employees.....	6,607,992.03	Do.
234e. Hire of employees.....	1,584,670.00	Water transport.
235e. Hire of employees.....	873,051.00	Do.
236e. Hire of employees.....	629,912.20	Do.
Employees:		
229f. Operation, automobiles.....	200,000.00	Motor transport.
929j. Operation, motor trucks.....	751,840.00	Do.
229m. Operation, motorcycles.....	48,160.00	Do.
Total.....	37,260,172.83	

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 166.

*Item name:* Postage, not including parcel post.*Appropriation:* Supplies, service, and transportation.

Total estimated cost: \$16,600.

Cost based on per capita cost of \$0.0332 for fiscal year 1916.

**Explanation:**

The amount estimated for under this item is based on cost of \$3,458.84 for the fiscal year 1916.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

BUREAU OF FINANCE.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 167.

*Item name:* Telegrams and cablegrams.*Appropriation:* Supplies, service, and transportation.

Total estimated cost: \$280,550.

Cost based on per capita cost for fiscal year 1916.

**Explanation:**

The per capita cost for maintaining the Army during the fiscal year 1916 was \$0.5611. Therefore, on such basis, the amount required to support an Army of 500,000 men will be the amount as above called for.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 179.

PERSONNEL DIVISION.

*Appropriation:**Item name:* Laborers.

Total cost of net requirements. . . . . \$4,044,041.27

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 22.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 180.

PERSONNEL DIVISION.

*Appropriation:**Item name:* Interpreters.

Total cost of net requirements. . . . . \$30,100

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 23.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 181.

PERSONNEL DIVISION.

*Appropriation:**Item name:* Spies.

Total cost of net requirements. . . . . \$50,000

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 24.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 182.

PERSONNEL DIVISION.

*Appropriation:**Item name:* Guides.**Total cost of net requirements. . . . . \$25,000**

- 
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 25.

---

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 183.

PERSONNEL DIVISION.

*Appropriation:**Item name:* Clerks.**Total cost of net requirements. . . . . \$5,813,847.78**

- 
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 26.

---

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 184.

PERSONNEL DIVISION.

*Appropriation:**Item name:* Other employees.**Total cost of net requirements. . . . . \$7,348,904.43**

- 
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 27.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 185.

PERSONNEL DIVISION.

*Appropriation:*                      *Item name:* Clerks, Disciplinary Barracks.

Total cost of net requirements..... \$4,000

- 
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 28.

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ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 186.

PERSONNEL DIVISION.

*Appropriation:*                      *Item name:* Foremen, Disciplinary Barracks.

Total cost of net requirements..... \$22,708.50

- 
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 29.

---

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 188.

PERSONNEL DIVISION.

*Appropriation:*                      *Item name:* Organist, Disciplinary Barracks.

Total cost of net requirements..... \$104

- 
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
See detailed sheets attached or Appendix No. 30.



ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

Item No. 189a-j.

DIRECTOR OF PURCHASE AND STORAGE.

ADMINISTRATIVE DIVISION.

*Appropriation:* General appropriation, Quartermaster Corps (incidental expenses).

*Item name:* Recruiting, incidental expenses of.

	Strength.	Working basis.	Requirements.
Maintenance . . . . .	500, 000	Per capita cost for 950,000 men for fiscal year 1918.	\$95, 000

COST BASIS: \$0.19 per capita.

Total cost of net requirements. . . . . \$95, 000

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
This is not an estimate for an appropriation in view of the fact that under date of September 3, 1918, The Adjutant General of the Army issued instructions for the closing of all recruiting stations, but is merely a report of costs under this item.

JANUARY 3, 1919.

[Memorandum to be attached to Item No. 189a-j, estimate for the fiscal year 1920.]

The amount estimated for—i. e., \$95,000—should be divided among the several subitems of recruiting as follows:

Item No.	Amount.
189. Miscellaneous expenses.....	\$45, 000
189a. Baths.....	1, 000
189b. Bill posting.....	33, 000
189c. Advertising.....	16, 000
189d. Drayage.....	
189e. Ice.....	
189f. Laundry.....	
189g. Telephone service.....	
189h. Removal of garbage.....	
189i. Drinking water.....	
189j. Printing.....	

Under Items 189-d-e-f-g-h-i-j no estimates are submitted for the reason that these items have been provided for under other items included in the general appropriation bill for the same services; that is, provision for drayage has been made under the appropriation for transportation of the Army; ice under the provision for subsistence; laundry under the provision for salvage, etc.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

Item No. 190.

OFFICE OF DIRECTOR OF PURCHASE AND STORAGE.

ADMINISTRATIVE DIVISION.

Appropriation: General appropriations, Quartermaster Corps (incidental expenses).

Item name: Deserters, apprehension and delivery of.

	Strength.	Working basis.*	Requirements.
Maintenance . . . . .	500, 000	Cost of fiscal year 1918 . . . . .	\$280, 000

Total cost of net requirements . . . . . \$280, 000

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
This estimate is based on actual cost for the first nine months of the fiscal year 1918, during which period conditions and prices existed which it is contemplated will be similar to those for the fiscal year 1920.
5. REMARKS:  
In accordance with paragraph 121, Army Regulations, and as provided for in the act approved July 9, 1918 (Army appropriation act), a reward of \$50 is paid for the apprehension and delivery of deserters and escaped military prisoners. Based upon the actual cost for the first nine months of the fiscal year 1918, the above estimated amount will be required.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

Item No. 191.

OFFICE OF DIRECTOR OF PURCHASE AND STORAGE.

ADMINISTRATIVE DIVISION.

Appropriation: General appropriations, Quartermaster Corps (incidental expenses).

Item name: Escaped military prisoners, apprehension and delivery of.

5. REMARKS:  
Provision has been made under Item No. 190 for this item. Reports on these items can not always be distinguished, and therefore the estimate under Item No. 190 includes both deserters and escaped military prisoners.

ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

Item No. 192.

OFFICE OF DIRECTOR OF PURCHASE AND STORAGE.

ADMINISTRATIVE DIVISION.

*Appropriation:* General appropriations, Quartermaster Corps (incidental expenses).*Item name:* Donation of \$5 to discharged prisoners.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	\$5.....	\$9, 190

**Total cost of net requirements..... \$9, 190**

\*"Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

**1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:**

This estimate is based on actual cost for the first nine months of the fiscal year 1918, during which period conditions and prices existed which it is contemplated will be similar to those for the fiscal year 1920.

**5. REMARKS:**

As provided by the act approved July 9, 1918, a donation of \$5 is given to each discharged military prisoner upon his release from confinement. Based upon the actual cost for the first nine months of the fiscal year 1918, it is estimated that there will be approximately 1,838 prisoners released during the fiscal year 1920, which at \$5 each gives the amount estimated for.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

QUARTERMASTER CORPS.

GENERAL SUPPLIES DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 201.

*Item name:* Additional expenditures.

*Appropriation:* Incidental expenses.

Total estimated cost: \$293,245.74.

FORM F 1.

**ESTIMATE FOR**  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FISCAL YEAR 1920. Item No. 201.

OFFICE OF DIRECTOR OF PURCHASE AND STORAGE.

ADMINISTRATIVE DIVISION.

*Appropriation:* General appropriations. Quartermaster Corps (incidental expenses).

*Item name:* Additional expenditures (caring for post cemeteries).

	Strength.	Working basis.*	Requirements.
Maintenance.....	500,000	Cost for fiscal year 1918.....	\$10,000

Total cost of net requirements..... \$10,000

\*"Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

5. REMARKS:

This item has been provided for under additional expenditures authorized by the act approved July 9, 1918 (Army appropriation act, fiscal year 1919). Based on cost during the fiscal year 1918, it is estimated that the above amount will be required.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 355.***Item name:* Employees, hire of.*Appropriation:* Shooting galleries and ranges.**Total estimated cost: \$1,116.****Explanation:**

For detail of this item see Appendix —.

FORM F 2.

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**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 325.***Item name:* Employees, pay of.*Appropriation:* Roads, walks, wharves, and drainage.**Total estimated cost: \$48,990.****Explanation:**

For detail of this item see Appendix —.

FORM F 2.

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**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 293.***Item name:* Hire of employees.*Appropriation:* Barracks and quarters.**Total estimated cost: \$289,527.40.****Explanation:**

For detail of this item see Appendix —.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

PURCHASE, STORAGE AND TRAFFIC.

Item No. 281.

REMOUNT DIVISION.

Appropriation: Item name: Hire of employees.

Total cost of net requirements. . . . . \$22, 220

Date, Jan. 6, 1919.

OTHER EMPLOYEES.

ITEM 53. —General appropriations, Quartermaster Corps, fiscal year 1920 (formerly paid from Item 281—Horses: Cavalry, Artillery, and Engineers).

Estimate for hire of following employees at permanent remount depots located at Fort Keogh, Mont., and Front Royal, Va.; also Fort Reno, Okla.:

Front Royal, Va.:

Trainers, 5, at \$600.....	\$3, 000	
Hostlers, 5, at \$600.....	3, 000	
		<u>\$6, 000</u>

Fort Keogh, Mont.:

Chief trainer, 1, at \$1,000.....	1, 000	
Assistant trainers, 8, at \$600.....	4, 800	
Range riders, 2, at \$600.....	1, 200	
Assistant range riders, 2, at \$540.....	1, 080	
Cook, 1, at \$600.....	600	
		<u>8, 680</u>

Fort Reno, Okla.:

Cook, 1, at \$600.....	600	
Hostlers, 2, at \$600.....	1, 200	
Range rider, 1, at \$600.....	600	
Range rider, assistant, 1, at \$540.....	540	
Trainer, chief, 1, at \$1,000.....	1, 000	
Trainers, 6, at \$600.....	3, 600	
		<u>7, 540</u>

Total..... 22, 220

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 266a.

CLOTHING AND EQUIPAGE DIVISION.

Appropriation: Item name: Employees, hire.

Total cost of net requirements. . . . . \$3, 338, 523. 78

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:

For detail of this item see Appendix —.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 248.

*Item name:* Employees formerly paid from appropriation water and sewers.*Appropriation:* Water and sewers at military posts.

Total estimated cost: \$367,419.20.

**Explanation:**

In estimating for this item it is considered that it will be necessary to maintain a civilian force at all posts and camps that are to be occupied by the military force and also to maintain a smaller force at such points as are not active but which have not been actually abandoned.

For details of this item see Appendix.

**ESTIMATE FOR****EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 110c.

**SUBSISTENCE DIVISION.***Appropriation:* Subsistence of the Army. *Item name:* Hire of employees.

Cost Basis: \$1,400, \$1,500, \$1,200.

Total cost of net requirements..... \$10, 100

**5. REMARKS:**

Meat inspectors are now officers or enlisted men, or are furnished by the Medical Department or by the Department of Agriculture. This estimate is for 1 inspector at \$1,400, 1 at \$1,500, and 6 at \$1,200. They are appropriated for annually.

Date, November 25, 1918.

**ESTIMATE FOR****EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 138.

**GENERAL SUPPLIES DIVISION.***Appropriation:* *Item name:* Employees, hire of.

Total cost of net requirements..... \$1, 670, 507. 80

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
For detail of this item see Appendix No. 21.



ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 138.

SALVAGE DIVISION.

*Appropriation:*

*Item name:* Employees, operation of laundries.

Total cost of net requirements..... \$2,350,480

- 
1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
For detail of this item see Appendix No. 21.

100626—19—PT 8—2

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

QUARTERMASTER CORPS.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 231.

*Item name:* Teamsters, hire of.*Appropriation:* Army transportation.

Total estimated cost: \$142,371.70.

**Explanation:**

For detail of this item see Appendix —.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

QUARTERMASTER CORPS.

CENTRAL DISBURSING DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 232.

*Item name:* Hire of employees.*Appropriation:* Army transportation.

Total estimated cost: \$6,607,992.03.

**Explanation:**

For detail of this item see Appendix —.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

QUARTERMASTER CORPS.

WATER TRANSPORT BRANCH.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 234e.

*Item name:* Wages of employees.*Appropriation:* Army transportation.

Total estimated cost: \$1,584,670.

**Explanation:**

For detail of this item see Appendix —.

FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**QUARTERMASTER CORPS.**

**WATER TRANSPORT BRANCH.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

Item No. 235e.

*Item name:* Wages of employees.

*Appropriation:* Army transportation.

Total estimated cost: \$873,051.

**Explanation:**

For detail of this item see Appendix —.

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FORM F 2.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

**QUARTERMASTER CORPS.**

**WATER TRANSPORT BRANCH.**

**ANNUAL ESTIMATE FISCAL YEAR 1920.**

Item No. 236e.

*Item name:* Wages of employees.

*Appropriation:* Army transportation.

Total estimated cost: \$629,912.20.

**Explanation:**

For detail of this item see Appendix —.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

MOTOR TRANSPORT CORPS.

Item No. 229F.

Appropriation: Item name: Operating and maintenance of automobiles.

Total cost of net requirements..... \$200,000

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

120 drivers, at \$1,200 each.....	\$144,000
40 mechanics, at \$1,312 each.....	52,480
4 helpers, at \$880 each.....	3,520
	<hr/> 200,000

5. REMARKS:

The amount previously authorized under this item has been entirely for pay of civilian drivers, mechanics, etc.; with the passing of the emergency this can be reduced from \$1,000,000 to \$200,000. but it is considered wise to have some appropriation under this item.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

MOTOR TRANSPORT CORPS.

Item No. 229J

Appropriation: Item name: Operation and maintenance of motor trucks.

Total cost of net requirements..... \$751,840

2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:

460 drivers, at \$1,200 each.....	\$552,000
104 mechanics, at \$1,312 each.....	136,448
56 helpers, at \$1,132 each.....	63,392
	<hr/> 751,840

Reduced from \$3,750,000 to \$751,840.

5. REMARKS:

Repair shop and equipment program has not been figured as with decreasing demand the equipment on hand at end of 1919 should be ample without further expenditure.

ESTIMATE FOR  
**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FORM F 1.

FISCAL YEAR 1920.

MOTOR TRANSPORT CORPS.

Item No. 229N.

*Appropriation:*                      *Item name:* Operation and maintenance of motorcycles.

Total cost of net requirements..... \$48,160

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**2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:**

40 drivers, at \$1,000 each.....	\$40,000
2 mechanics, at \$1,100 each.....	2,200
5 mechanics, at \$1,000 each.....	5,000
1 helper, at \$960.....	960
	<hr/>
	48,160

---

**5. REMARKS:**

The amount previously authorized under this item has been entirely for pay of civilian drivers, mechanics, etc., the amount was \$250,000, but it has been reduced to \$48,160, as with the passing of the emergency this will be largely taken care of by enlisted men.



WATER AND SEWERS.

Item.	Amount.	Division making estimate.
Water systems:		
237. Procuring water.....	\$2,080,700	Construction.
237a. Purchase of water.....	1,799,542	Do.
237b. Sterilizers and filters.....		General supplies.
238. Introducing water to buildings.....	190,475	Construction.
239. Installation and extension of plumbing.....	1,887,153	Do.
Fire apparatus:		
240. Purchase of.....	100	Do.
241. Repair of.....	418,431	Do.
Fire-alarm systems:		
242. Purchase of.....		Do.
242a. Repair of.....	10,000	Do.
Sewage:		
243. Disposal of.....	490,962	Do.
243a. Expenses incident thereto.....		Salvage.
243c. Incinerators, purchase, etc.....	64,272	Construction.
244. Toilet paper.....	1,800,500	General supplies.
245. Water systems, repairs to.....	1,800,400	Construction.
246. Sewer systems, repairs to.....	735,082	Do.
247. Plumbing within buildings, repairs to.....	1,677,760	Do.
Total.....	11,724,360	
Cut.....	608,858	
Total.....	11,114,899	

1 Cut.

FORM F 2. GROUP No. 4.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 237.***Item name:* Water systems, installation.*Appropriation:* Water and sewers at military posts.**Total estimated cost:** \$2,080,700.**Total required:** \$2,080,700.**Explanation:**

With the greatly reduced program and with so many camps substantially completed it is not expected that any other than minor extensions to present existing systems will be made.

\$2,080,700 is 10 per cent of the amount prepared in the regular Army bill for the fiscal year 1919.

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FORM F 2. GROUP No. 28.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920:****Item No. 237a.***Item name:* Water, purchase of, not including water for vessels.*Appropriation:* Water and sewers at military posts.**Total estimated cost:** \$1,799,542.**Total required:** \$1,799,542.**Explanation:**

At many of the Regular Army posts and at certain of the camps which it is presumed will be maintained for permanent occupancy by troop it is necessary to purchase water from the public service corporation, and it is estimated that the necessary expenditure for this purchase will amount to \$1,799,542, which is 20 per cent of the amount appropriated in the Regular Army bill for the fiscal year 1919.



FORM F 2. GROUP No. 4.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 238.

*Item name:* Introducing water into buildings.*Appropriation:* Water and sewers at military posts.

Total estimated cost: \$190,475.

Total required: \$190,475.

**Explanation:**

Assuming that the troops will all be stationed at camps or posts already existing, it is not considered that the necessity for the expenditure of any considerable sum of money will be needed. There will undoubtedly be many cases where buildings will be modified to suit the different conditions which will exist.

The amount included, \$190,475, is 10 per cent of the amount prepared in 1919.

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FORM F 2. GROUP No. 4.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 239.

*Item name:* Plumbing within buildings.*Appropriation:* Water and sewers at military posts.

Total estimated cost: \$1,837,153.

Total required: \$1,837,153.

**Explanation:**

The necessity for an appropriation under this item is only for minor extensions and alterations at present existing in posts and camps. It is not expected that any considerable amount of work will be necessary at any one place.

The amount asked for, \$1,837,153, is 10 per cent of the amount of the appropriation for the fiscal year 1919.

FORM F 2. GROUP No. 28.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 240.***Item name:* Fire apparatus, purchase of.*Appropriation:* Water and sewers at military posts.

Total estimated cost: \$100.

Total required: \$100.

**Explanation:**

It is not expected that any expenditure will be necessary for this purpose. The sum of \$100 is included to keep this appropriation open.

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FORM F 2. GROUP No. 28.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 241.***Item name:* Fire apparatus, repair of.*Appropriation:* Water and sewers at military posts.

Total estimated cost: \$418,421.

Total required: \$418,421.

**Explanation:**

While the apparatus has been increased to a considerable extent since the estimates for the previous year, it is not expected that it will be necessary to maintain all of the apparatus in active service.

The amount estimated, \$418,421, is the same amount that was appropriated for the year 1919.

FORM F 2. GROUP No. 28.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 242.

*Item name:* Fire-alarm system, purchase of.*Appropriation:* Water and sewers at military posts.**Explanation:**

It is not considered that any appropriation will be necessary under this item.

FORM F 2. GROUP No. 28.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 242a.

*Item name:* Fire-alarm system, repair of.*Appropriation:* Water and sewers at military posts.

Total estimated cost: \$10,000.

Total required: \$10,000.

**Explanation:**

Until the fiscal year 1920 the fire-alarm systems have been maintained on a rental basis but arrangements have been made so that they will, at the expiration of the fiscal year 1919, become the property of the Government and it will be necessary to provide for their maintenance during the fiscal year 1920.

It is expected that by that time the Government will have men sufficiently trained to maintain the system independent of the company which installed them.

FORM F 2. GROUP No. 4.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.**

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 243.

*Item name:* Sewers, construction of.*Appropriation:* Water and sewers at military posts.

Total estimated cost: \$490,962.

Total required: \$490,962.

**Explanation:**

It is not expected that any expenditures will be made under this heading except for small extensions or alterations where accommodations are to be changed from the purpose for which they were originally intended.

The amount asked for, \$490,962, is 7½ per cent of the money appropriated for fiscal year 1919.

FORM F 1.

ESTIMATE FOR

**EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.**

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 243a.

SALVAGE DIVISION.

*Appropriation:*

*Item name:* Expenses incident to disposal of garbage.

5. REMARKS:

No appropriation required.

FORM F 2. GROUP No. 4.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 243c.

*Item name:* Incinerators, purchase of.*Appropriation:* Water and sewers at military posts.

Total estimated cost: \$66,272.

Total required: \$66,272.

**Explanation:**

It will be necessary for a number of posts and camps to renew or extend the facilities already existing. For this purpose and taking into consideration the great advance in cost of all materials and labor it has been necessary to include the same amount, namely, \$66,272, as was included for the fiscal year 1919.

QUARTERMASTER CORPS: CLOTHING AND EQUIPAGE DIVISION.

Item No. 244. Item name: Toilet paper. Appropriation: Water and sewers.	
Quartermaster Corps.....	\$596, 250
Medical Department.....	13, 250
Total.....	609, 500

ESTIMATE FOR

EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 244.

GENERAL SUPPLIES DIVISION.

Appropriation: (Previously purchased by Medical Department.)

Item name: Paper,

toilet, 2,000 sheets in roll.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500, 000	5,000 for 25,000.....	100, 000

Cost Basis:

\$0.1325 per roll. Total cost of net requirements..... \$13, 250

\* "Working basis" is the quantity required per man or per unit for stated period; or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:
- Estimate based on experience.
2. STATE THE SOURCE OR METHOD OF DETERMINING COST BASIS:
- Based on actual purchase of 1918.

ESTIMATE FOR  
EQUIPMENT, MATERIAL, AND PERSONAL SERVICES.

Form F 1.

FISCAL YEAR 1920.

QUARTERMASTER CORPS.

Item No. 244.

GENERAL SUPPLIES DIVISION.

Appropriation:

Item name: Paper, toilet, rolls.

	Strength.	Working basis.*	Requirements.
Maintenance.....	500	9,000 per 1,000 men per year.....	4,500,000

Total requirements..... 4,500,000

Cost Basis:      Net requirements..... 4,500,000  
\$0.1325.      Total cost of net requirements..... \$596,250  
Domestic.

\* "Working basis" is the quantity required per man or per unit for stated period or other factor used in arriving at the requirements.

1. STATE THE METHOD AND AUTHORITY FOR ARRIVING AT THE WORKING BASIS:  
    Estimated life 2 months per man based on previous experience of the Army.  
    No initial issue.

5. REMARKS:  
    10 pounds tissue, 24 x 36—500.



FORM F 2. GROUP No. 12.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 245.

*Item name:* Water systems, repair of.*Appropriation:* Water and sewers at military posts.

Total estimated cost: \$1,808,402.

Total required: \$1,808,402.

**Explanation:**

This is the same amount that was included in the regular Army bill for the fiscal year 1919. While it is expected that a number of the present camps will not be in use, the original installation was somewhat in the nature of temporary work, and with the probability that they will have to be in use for some time, such repairs as are necessary will be made with a view to making the complete plant of a more permanent nature.

It is estimated that the same amount will be necessary as was appropriated for the year 1919.

FORM F 2. GROUP No. 12.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.**

WAR DEPARTMENT.

CONSTRUCTION DIVISION.

ANNUAL ESTIMATE FISCAL YEAR 1920.

Item No. 246.

*Item name:* Sewer systems, repair of.*Appropriation:* Water and sewers at military posts.

Total estimated cost: \$735,082.

Total required: \$735,082.

**Explanation:**

This is the same amount that was included in the regular Army bill for the fiscal year 1919, and while the total mileage of sewers will be less, as well as the number of disposal works, the higher cost of labor and the probable difficulty in finding men who will be fitted to do this class of work under any system makes it necessary to include the same amount for the year 1920 as for the previous year.

FORM F 2. GROUP No. 12.

**ESTIMATE FOR CONSTRUCTION AND KINDRED PROJECTS.****WAR DEPARTMENT.****CONSTRUCTION DIVISION.****ANNUAL ESTIMATE FISCAL YEAR 1920.****Item No. 247.***Item name:* Plumbing within buildings, repair of.*Appropriation:* Water and sewers at military posts.

Total estimated cost: \$1,677,760.

Total required: \$1,677,760.

**Explanation:**

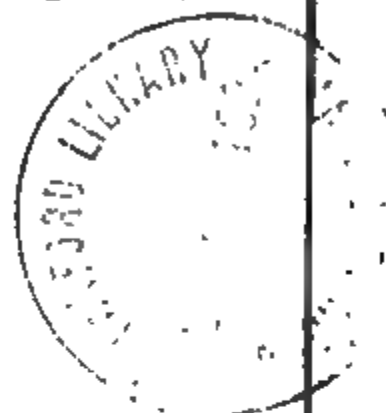
The character of the buildings in which the plumbing is installed, together with the usage which it receives, makes an increase of maintenance and repair each year. While the number of fixtures in use during the year 1920 will be very much less than during the year 1919, it will undoubtedly be necessary to employ mechanics to do this work instead of having it done by the enlisted personnel. The amount required for the fiscal year 1920 is 20 per cent above the amount appropriated for this item in the regular Army bill for 1919.





# **ARMY APPROPRIATION BILL**

**1920**



## **ORDNANCE DEPARTMENT**

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**Printed for the use of the Committee on Military Affairs of the House**

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### **PART 9**

**WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1919**



ORDNANCE DEPARTMENT.

Summary of estimates, Army bill, 1920, revised.

[Based on 500,000 in United States, including 50,000 in insular possessions.]

Appropriation title.	Original estimate.	P. S. and T. estimate.	New Ordnance estimate.	Average, 1914.
Ordnance Service.....	\$39,302,394.00	\$3,930,239.40	<sup>1</sup> \$6,005,067.00	\$312,000.00
Ordnance stores, ammunition.....	1,087,785,405.00	108,778,540.50	3,999,002.00	142,000.00
Small-arms target practice.....	96,971,410.00	9,697,141.00	1,430,075.00	777,000.00
Manufacture of arms.....	35,077,225.00	8,507,722.50	5,405,000.00	433,000.00
Ordnance stores and supplies.....	544,600,300.00	54,460,030.00	4,396,790.00	800,000.00
Automatic machine rifles.....	588,354,510.00	58,835,451.00	3,075,000.00	150,000.00
Armored motor cars.....	611,480,000.00	61,146,000.00	500,000.00	50,000.00
Rifle ranges, civilian.....	1,863,018.00	.....	.....	.....
Ordnance equipment, home guard organizations.....	4,409,093.00	.....	.....	.....
Ordnance supplies, military equipment, schools, and colleges.....	2,501,100.00	.....	.....	.....
National trophy.....	10,000.00	10,000.00	10,000.00	.....
Total of Army bill.....	3,012,334,455.00	290,365,124.00	24,820,935.00	2,664,000.00

<sup>1</sup> Estimate was submitted to Congress for \$6,548,600 under "Ordnance service." This is \$543,533 excess of the new ordnance estimate of \$6,005,067.

ORDNANCE SERVICE, 1919-20.

For the current expenses of the Ordnance Department in connection with purchasing, receiving, storing, and issuing ordnance and ordnance stores, comprising police and office duties, rents, tools, fuel, light, water, and advertising, stationery, typewriters, and adding machines, including their exchange, and office furniture, tools, and instruments of service; for incidental expenses of the Ordnance Service and those attending practical trials and tests of ordnance, small arms, and other ordnance stores; for publications for libraries of the Ordnance Department, including the Ordnance Office; subscriptions to periodicals, which may be paid for in advance; and payment for mechanical labor in the office of the Chief of Ordnance; and for purchase, maintenance, repair and operation of motor-propelled or horse-drawn passenger-carrying vehicles, \$6,005,067.

Summary of estimate.

1. Handling ammunition and ammunition supplies at depots and piers (Col. Heckman's report).....	\$1, 557, 600
2. Arsenal expense.....	3, 000, 000
3. Proving ground expense (see Col. Dillard's letter).....	405, 867
4. Nitrate Division, office research and maintenance of laboratory.....	461, 000
5. Ordnance schools for officers.....	80, 600
6. District office expense.....	500, 000
Total.....	6, 005, 067
Amount not needed.....	543, 533
Total submitted.....	6, 548, 600

ORDNANCE SERVICE.

For the current expenses of the Ordnance Department in connection with purchasing, receiving, storing, and issuing ordnance, ordnance stores, comprising police and office duties, rents, tolls, fuel, lights, water, advertising, stationery, typewriters, adding machines, office furniture, tools, and instruments of service; incidental expenses of Ordnance Department, including the Ordnance Office; subscriptions to periodicals, mechanical labor in the Office of the Chief of Ordnance; and for purchase, maintenance, repair, and operation of motor-propelled or horse-drawn passenger-carrying vehicles:

Previous appropriations.

Fiscal year.	Estimated.	Appropriated.	Date of act.	Fiscal year.	Estimated.	Appropriated.	Date of act.
1905.....	\$300,000	\$300,000	Apr. 23, 1904	1915.....	\$300,000	\$300,000	Apr. 27, 1914
1906.....	300,000	300,000	Mar. 2, 1905	1916.....	325,000	325,000	Mar. 4, 1915
1907.....	300,000	300,000	June 12, 1906	1917.....	20,000	20,000	Mar. 31, 1916
1908.....	300,000	300,000	Mar. 3, 1907	1917.....	550,000	550,000	Aug. 29, 1916
1909.....	300,000	300,000	Mar. 11, 1908	1917.....	28,000	28,000	Apr. 17, 1917
1910.....	325,000	325,000	Mar. 3, 1909	1918.....	425,000	350,000	May 12, 1917
1911.....	325,000	325,000	Mar. 23, 1910	1918.....	2, 500, 000	2, 650, 000	June 15, 1917
1912.....	337,000	337,000	Mar. 3, 1911	1918.....	11, 825, 000	11, 825, 000	Oct. 6, 1917
1913.....	337,000	337,000	Aug. 24, 1912	1919.....	30,000,000	30,000,000	July 9, 1918
1914.....	313,000	313,000	Mar. 2, 1913	1920.....	6, 548, 600	.....	.....

ORDNANCE SERVICE, 1920.

Original estimate.....	\$39, 302, 394. 00
Submitted to Congress.....	3, 930, 239. 40
Supplemental.....	2, 618, 360. 60
Total submission.....	6, 548, 600. 00
Amount not needed.....	543, 533. 00
Net required.....	6, 005, 067. 00



*Estimates for ordnance service for fiscal year 1920.*

## CHIEF OF FIELD SERVICE.

	Required, fiscal year 1920.	Appropri- ated, fiscal year 1919.
Handling ammunition, explosives, and artillery at supply depots.....		<sup>1</sup> \$10,074,000
Item I. Handling ammunition and explosives, 13,200 cars, at \$25.50 per car.....	\$336,600	
Item II. Handling artillery and artillery vehicles, 15,800 cars, at \$25.50 per car...	402,900	
Total, 29,000 cars.....	739,500	10,074,000
HEAT, LIGHT, POWER, AND MISCELLANEOUS OPERATING EXPENSES.		
Item III. Electric light and power.....	531,300	770,000
Item IV. Water.....	36,880	52,000
Item V. Heating of buildings, operation of locomotives, locomotive cranes, etc.	217,920	854,000
Item VI. General supplies, oil, waste, gasoline, paints, cleaning and preserv- ing materials, etc.....	32,000	34,000
Total.....	818,100	1,710,000
Grand total.....	1,557,600	11,784,000

<sup>1</sup> Handling ordnance matériel, 732,000 cars, at \$13.75 per car.

## FUNDS REQUIRED BY DIRECTOR OF ARSENALS.

	Required.	Expanded, 1917.
(1) Services of clerks engaged on rendering money and property papers and on other general work.....	\$864,105	
(2) Services and supplies required in receiving and issuing ordnance and ordnance stores.....	1,050,000	
(3) Maintenance of transportation including services of teamsters and purchase of forage, etc., but excluding motor-propelled or horse-drawn passenger- carrying vehicles.....	150,000	\$25,824
(4) Services and supplies required for the maintenance of heating plants for offices, storehouses, and other buildings not used for manufacture or experi- ments.....	50,000	11,859
(5) Services and supplies required for the illumination of grounds and buildings not used for manufacturing or experimental purposes.....	60,000	10,778
(6) Maintenance of water supply and its purchase for other than manufacturing or experimental purposes.....	51,000	12,743
(7) Publications.....	4,575	440
(8) Stationery and office supplies, including the cost of printing the annual cata- logue.....	40,000	8,564
(9) Telephone services for other than manufacturing purposes.....	17,000	4,091
(10) The services of messengers and watchmen on other than manufacturing work, including the cost of street car tickets.....	50,485	24,163
(11) Tools and supplies for general use not provided for under general headings...	25,000	6,325
(12) Maintenance, repair, and operation of motor-propelled and horse-drawn vehicles.....	337,835	
(13) Incidental and necessary expenses not provided for under the above head- ings.....	300,000	
Total.....	3,000,000	

## ESTIMATES, OFFICE SERVICE FOR THE TECHNICAL STAFF, FISCAL YEAR 1920.

1. The following is a recapitulation of the amounts asked for under "Ordnance Service" for the technical staff. The details to substantiate these estimates are given under the separate headings:

Aberdeen Proving Ground.....	\$265,000
Erie Proving Ground.....	50,000
Sandy Hook Proving Ground.....	43,970
Savannah Proving Ground.....	10,000
Miscellaneous, including travel orders for officers of the technical staff and emergencies occurring at these proving grounds, 10 per cent of the above.	36,897
Total.....	405,867

2. The miscellaneous item of 10 per cent included in the above is to take care of unforeseen contingencies and the travel of officers and employees of the technical staff and of the proving grounds in all cases where such travel is properly chargeable to Ordnance Service.

*Estimate for ordnance service for fiscal year 1920—Continued.*

## ABERDEEN PROVING GROUND.

	Disbursed 6 months ending Feb. 28, 1918.	Amount estimated.	Reduced estimate on peace basis.
Services of clerks engaged on rendering money and property papers and on other general work.....	\$77,128.67	\$365,000.00	\$55,000.00
Services and supplies required in receiving and issuing ordnance and ordnance stores.....	42,334.30	200,000.00	31,000.00
Maintenance of transportation, including services of teamsters and purchase of forage, etc., but excluding motor-propelled or horse-drawn passenger-carrying vehicles.....	68,600.18	350,000.00	50,000.00
Services and supplies required for the maintenance of heating plants for offices, storehouses, and other buildings not used for manufacture or experiments.....	21,362.72	100,000.00	25,000.00
Services and supplies required for the illumination of grounds and buildings not used for manufacture of experiments.....	7,238.49	35,000.00	5,000.00
Maintenance of the water supply and its purchase for other than manufacturing or experimental purposes.....	1,649.95	10,000.00	2,000.00
Publications; stationery and office supplies not furnished by the Ordnance Office, including the cost of printing the annual catalogue, except that part of which pertains to manufactures; telephone service for other than manufacturing purposes.....	45,403.34	215,000.00	32,000.00
Services of messengers and watchmen on other than manufacturing work, including the cost of street car tickets.....	550.33	4,000.00	2,000.00
Tools and supplies for general use not provided for under above headings.....	3,083.98	20,000.00	2,500.00
Maintenance, repair, and operation of motor-propelled and horse-drawn passenger-carrying vehicles.....	28,291.35	15,000.00	1,500.00
Incidental and necessary expenses not provided for under the above headings.....	79,856.04	410,000.00	60,000.00
Total.....	375,499.35	1,724,000.00	265,000.00
Rounds fired.....	312,297		
Rounds estimated.....		3,600,000	217,000

## ERIE PROVING GROUND.

Purpose of allotment.	Estimated, 1919-20.
Services of clerks engaged on rendering money and property papers and on other general work..	\$18,700
Services and supplies required in the receiving and issuing of ordnance and ordnance stores..	3,300
Services and supplies required in the maintenance of wagon transportation, including the purchase of forage, etc.....	2,750
Maintenance of heating plant of offices, storehouses, and other buildings; illumination of grounds and buildings not used for manufactures or experiments; maintenance of the water supply and its purchase for other than manufacturing or experimental purposes.....	7,700
Publications; stationery and office supplies not including those provided through the Ordnance Office; telephone service.....	3,300
Services of messengers and watchmen on other than manufacturing work.....	3,300
Tools and supplies for general use not provided for under above headings; and incidental and necessary expenses not provided for under above headings.....	10,950
Total.....	50,000

*Estimate for ordnance service for fiscal year 1920—Continued.*

## SANDY HOOK PROVING GROUNDS.

	Expended.		Amount estimated, 1920.	
	July 1, 1915, to June 30, 1916.	July 1 to Dec. 31, 1919.	War times.	Peace times.
Services of clerks engaged in rendering money and property, and on other general work.....	\$12,567.37	\$29,198.46	\$74,000.00	\$14,000.00
Services and supplies required in receiving and issuing ordnance and ordnance stores.....	2,158.56	25,731.85	70,000.00	6,000.00
Maintenance of transportation, including services of teamsters and purchase of forage, etc.....	1,639.00	2,007.08	5,000.00	2,200.00
Services and supplies required for the maintenance of heating plants for offices, storehouses, and other buildings not used for manufacture or experiments; services and supplies required for the illumination of grounds and buildings not used for manufacture or experiments; maintenance of water supply and its purchase for other than manufacturing or experimental purposes.....	5,730.32	3,667.18	14,000.00	6,500.00
Publications; stationery and office supplies, not including those provided through the Ordnance Office; telephone service.....	1,724.31	2,970.87	28,000.00	2,500.00
Services of messengers and watchmen on other than manufacturing work, including the cost of street car tickets.....	2,016.44	647.22	3,000.00	2,500.00
Tools and supplies for general use not provided for under the above headings; incidental and necessary expense not provided under the above headings.....	6,724.39	14,044.21	28,000.00	8,270.00
Purchase, maintenance, repair, and operation of motor-propelled and horse-drawn passenger-carrying vehicles.....			6,465.00	2,000.00
<b>Total.....</b>	<b>32,560.39</b>	<b>78,266.87</b>	<b>228,465.00</b>	<b>43,970.00</b>
<b>Rounds fired.....</b>	<b>6,955</b>	<b>7,710</b>	<b>160,000</b>	<b>18,500</b>

<sup>1</sup> Estimated.

## SAVANNAH PROVING GROUND.

Purpose of allotment.	Estimated 1919-20.
Services of clerks engaged on rendering money and property papers and on other general work.....	\$3,000
Services and supplies required in the receiving and issuing of ordnance and ordnance stores..	1,000
Services and supplies required in the maintenance of wagon transportation, including the purchase of forage, etc.....	500
Maintenance of heating plant for offices, storehouses, and other buildings; illumination of grounds and buildings not used for manufactures or experiments; maintenance of the water supply and its purchase for other than manufacturing or experimental purposes.....	1,400
Publications; stationery and office supplies not including those provided through the Ordnance Office; telephone service.....	600
Services of messengers and watchmen on other than manufacturing work.....	600
Tools and supplies for general use not provided for under above headings; incidental and necessary expenses not provided for under above headings; motor propelled and horse drawn.....	2,900
<b>Total.....</b>	<b>10,000</b>

JANUARY 17, 1919.

From: Ordnance Branch, Requisitions Division, Office of Director of Finance.  
To: Mr. F. R. Leach.

1. In compliance with attached request, the following figures have been compiled on Ordnance Service, 1919, as shown below:

*Allotments, Ordnance Service, 1919.*

District office.	Oct. 1 to Dec. 31, 1918.	Jan. 1 to Mar. 31, 1919.	Total.
Boston.....	\$118,691	\$46,064	\$164,755
Bridgeport.....	335,154	41,045	376,199
Chicago.....	344,365	158,960	503,325
Cincinnati.....	171,726	30,000	201,726
Cleveland.....	248,739	84,500	333,239
Detroit.....	182,830	50,500	233,330
New York.....	456,690	197,750	654,440
Philadelphia.....	355,600	80,100	435,700
Rochester.....	147,245	22,090	169,335
Pittsburgh.....	122,368	44,648	167,016
St. Louis.....	62,667	27,250	89,917
Toronto.....	39,750	13,100	51,850
Total.....	2,584,815	795,947	3,380,762

By authority of the head of the bookkeeping unit.

C. C. LINERODE,  
*Second Lieutenant, Ordnance Department, U. S. Army.*

WAR DEPARTMENT,  
OFFICE OF CHIEF OF ORDNANCE, NITRATE DIVISION,  
*Washington, January 11, 1919.*

From: Nitrate Division, Ordnance Office.  
To: Administration Division, Ordnance Office.  
Subject: Estimates of funds required for fiscal year, 1920.

1. Attached hereto find estimates in the following amounts covering funds required by the Nitrate Division, under the appropriations "Ordnance Service, 1920"; "Repairs to arsenals, 1920," and "Armament of fortifications, C."

2. These estimates are supported by detailed sheets and notes showing how these figures were arrived at.

Ordnance Service, 1920.....	\$461,000
Repairs to arsenals.....	900,000
Armament of fortifications, C.....	300,000

3. These estimates are based on the supposition that plants No. 1 and No. 2 will be shut down for the fiscal year 1920, and that plants No. 3 and No. 4 and United States chemical plant, Saltville, Va., will be either salvaged or disposed of; the amounts requested for plants No. 3, No. 4, and Saltville, being nominal sums.

E. T. D. MYERS, Jr.,  
*Major, Ordnance Department, U. S. Army.*

(For and in the absence of Col. J. W. Joyce.)

*Recapitulation of estimated funds required by Nitrate Division, Ordnance Office, 1920.*

Office supplies.....	\$10,000
Technical books and publication.....	1,000
United States Nitrate Plant No. 1, Sheffield, Ala.....	100,250
United States Nitrate Plant No. 2, Muscle Shoals, Ala.....	197,200
United States Nitrate Plant No. 3, Toledo, Ohio.....	34,200
United States Nitrate Plant No. 4, Ancor, Ohio.....	34,200
Chemical plant, Saltville, Va.....	35,150
Warrior-Sheffield transmission line.....	49,000
Total.....	461,000

*Estimate of funds required for ordnance schools, fiscal year ending June 30, 1920.*

Pay of 6 special technical instructors.....	\$20,000	
Tuition of student officers taking supplementary courses at civil educational institutions, 150 at \$100 each.....	15,000	
Tuition of officers taking advanced courses at civil educational institutions, 10 at \$250 each.....	2,500	
Publications—Subscriptions to technical and scientific periodicals, technical books, printing and binding of professional books.....	3,000	
Purchase of special apparatus and instruments.....	12,000	
For installation of material and equipment.....	5,000	
For pay of civilian stenographers, clerks, draftsmen, electricians, mechanics and laborers:		
3 stenographers, at \$1,400.....	\$4,200	
3 stenographers, at \$1,200.....	3,600	
3 clerks, at \$1,400.....	4,200	
2 draftsmen, at \$1,800.....	3,600	
1 electrician.....	1,500	
3 mechanics, at \$1,500.....	4,500	
2 laborers, at \$1,000.....	2,000	
		23,600
<b>Total.....</b>		<b>80,600</b>

## ORDNANCE STORES AND AMMUNITION, 1920.

## URGENT DEFICIENCY ESTIMATE, 1918-19.

The manufacture and purchase of ammunition for small arms and for hand use for reserve supply; ammunition for burials, National Soldiers' Home in Washington, D. C.; ammunition for firing the morning and evening guns at military posts, described by General Order I, No. 70, Headquarters of the Army, dated July 23, 1867, at National Home for Disabled Volunteer Soldiers, and at several branches, including National Soldiers' Home in Washington, D. C., and soldiers' State homes. \$3,999,002.

*Summary of estimate.*

1 Small-arms ammunition.....	\$1,350,000
2 Segregation and salvage of 2,000,000,000 rounds of ammunition.....	1,000,000
3 Experimental work, small-arms ammunition.....	295,000
4 Experimental work on hand and rifle grenades.....	75,000
5 Design and development of drop bombs.....	600,000
6 Manufacture of drop bombs.....	\$504,002
Loading of drop bombs.....	175,000
	<hr/> 679,002
Total.....	3,999,002

## ORDNANCE STORES AND AMMUNITION.

Manufacture and purchase of ammunition for small arms and for hand use for reserve supply, ammunition for burials at the National Soldiers' Home in Washington, D. C., ammunition for firing the morning and evening guns at military posts prescribed by General Orders, No. 70, Headquarters of the Army, dated July 23, 1867; and at National Home for Disabled Volunteer Soldiers and its several branches, including National Soldiers' Home in Washington, D. C., and soldiers' and sailors' State homes

*Previous appropriations and contract authorizations.*

Fiscal year.	Estimated.	Appropriated.	Contract authorizations.	Date of act.
1910.....		\$700,000		Mar. 3, 1909
1911.....		450,000		Mar. 23, 1910
1912.....		500,000		Mar. 3, 1911
1913.....		250,000		Aug. 24, 1912
1914.....		200,000		Mar. 2, 1913
1915.....		125,000		Apr. 27, 1914
1916.....		100,000		Mar. 4, 1915
1917.....		10,000,000		Aug. 29, 1916
1918.....		12,000,000		May 12, 1917
1918.....		131,048,000		June 15, 1917
1918.....		69,750,000		Oct. 6, 1917
1918.....		107,722,000	<sup>1</sup> \$180,000,000	Mar. 28, 1918
1919.....	1	390,000,000	706,486,991	July 9, 1918
1919.....				
1920.....				

<sup>1</sup> Converted into cash by 1918 Army bill.

*Ordnance stores and ammunition, 1920.*

Original estimate.....	\$1,037,785,405.00
Submitted to Congress.....	103,778,540.50
Withdrawal.....	99,779,538.50
Net.....	<hr/> 3,999,002.00

SMALL ARMS TARGET PRACTICE, 1920.

For manufacture and purchase of ammunition, targets, and other accessories for small arms, hand and machine gun target practice and instructions; marksmen's medals, prize arms, and insignia for all arms of the service; and ammunition, targets, target materials and other accessories which may be issued for small arms target practice and instruction at the educational institutions and State soldiers' and sailors' orphans' homes to which issues of small arms are lawfully made, under such regulations as the Secretary of War may prescribe, \$1,430,076.

Summary of estimate.

1. Experimental work on rifles and machine-gun targets.....	\$25, 000
2. Small-arms ammunition.....	1, 350, 000
3. Target materials and accessories.....	50, 000
4. Development of practice grenades.....	5, 076
	<hr/> 1, 430, 076

SMALL-ARMS TARGET PRACTICE.

For manufacture and purchase of ammunition targets and other accessories for small-arms, hand, and machine-gun target practice and instruction; markmen's medals, prize arms, and insignia for all other accessories which may be issued for small-arms target practice and instruction at the educational institutions and State soldier's and sailor's orphans' homes to which issues of small arms are lawfully made, under such regulations as the Secretary of War may prescribe:

Previous appropriations and contract authorizations.

Fiscal year.	Estimated.	Appropriated.	Contract au- thorizations.	Date of act.
1910.....	\$1, 330, 000	\$1, 330, 000		Mar. 3, 1909
1911.....	1, 000, 000	1, 000, 000		Mar. 23, 1910
1912.....	1, 000, 000	1, 000, 000		Mar. 3, 1911
1913.....	900, 000	900, 000		Aug. 24, 1912
1914.....	800, 000	750, 000		Mar. 2, 1913
1915.....	825, 000	750, 000		Apr. 27, 1914
1916.....	825, 000	800, 000		Mar. 4, 1915
1917.....	3, 474, 000	3, 000, 000		Aug. 29, 1916
1918.....	2, 500, 000	2, 000, 000		May 12, 1917
1918.....	17, 500, 000	17, 500, 000		June 15, 1917
1918.....	89, 676, 000	89, 676, 000		Oct. 6, 1918
1918.....	900, 000	900, 000		Mar. 28, 1918
1919.....	159, 273, 725	75, 200, 000	\$84, 075, 725	July 9, 1918
1919.....	59, 787, 568		59, 787, 568	Nov. 4, 1918
1920.....	1, 480, 076			

Small-arms target practice, 1920.

Original estimate.....	\$6, 971, 410
Submitted to Congress.....	9, 697, 141
To be withdrawn.....	8, 267, 065
Net.....	<hr/> 1, 430, 076

**MANUFACTURE OF ARMS, 1920.**

For manufacturing, repairing, procuring, and issuing arms, \$5,405,000.

*Summary of estimate.*

1. Manufacture of rifles.....	\$2, 700, 000
2. Manufacture of bayonets, slings, thongs, and accessories.....	800, 000
3. Experimental and developmental work on rifles, pistols, self-loading rifles, and shotguns.....	300, 000
4. Maintenance, repair, and overhauling rifles.....	800, 000
5. Overhauling pistols and revolvers.....	130, 000
6. Salvage of machines at arsenals.....	75, 000
7. Buildings and installation of tools for salvage at arsenals.....	600, 000
<b>Total.....</b>	<b>5, 405, 000</b>

**MANUFACTURE OF ARMS.**

For manufacture, repairing, procuring, and issuing arms:

*Previous appropriations and contract authorizations.*

Fiscal year	Estimated.	Appropriated.	Contract au- thorizations.	Date of act
1910.....	\$1, 700, 000	\$1, 700, 000		Mar. 3, 1909
1911.....	1, 000, 000	1, 000, 000		Mar. 23, 1910
1912.....	00	750, 000		Mar. 3, 1911
1913.....	00	700, 000		Aug. 24, 1912
1914.....	00	600, 000		Mar. 2, 1913
1915.....	00	450, 000		Apr. 27, 1914
1916.....	00	250, 000		Mar. 4, 1915
1917.....	00	5, 000, 000		Aug. 29, 1916
1918.....	00	5, 000, 000		May 12, 1917
1918.....	00	55, 349, 000		June 15, 1917
1918.....	00	15, 000, 000	<sup>1</sup> \$15, 000, 000	Oct. 6, 1917
1918.....	00	27, 996, 100		Mar. 28, 1918
1919.....	25	50, 000, 000	307, 324, 325	July 8, 1918
1919.....	75		85, 156, 875	Nov 4, 1918
1920.....	00			

<sup>1</sup> Converted into cash by 1919 Army bill.*Manufacture of arms, 1920.*

Original estimate.....	\$85, 077, 225. 00
Submitted to Congress.....	8, 507, 722. 50
To be withdrawn.....	3, 102, 722. 50
<b>Net.....</b>	<b>5, 405, 000. 00</b>



**ORDNANCE STORES AND SUPPLIES, 1920.**

For overhauling, cleaning, repairing and preserving ordnance and ordnance stores, in the hands of troops and at the arsenals, posts and depots; for purchase and manufacture of ordnance stores to fill requisitions of troops; for Infantry, Cavalry, and Artillery, \$4,396,790.

*Summary of estimates.*

1. Experimental work on personal and horse equipment.....	\$61,500
2. Experimental work on bomb sights and release mechanism.....	150,000
3. Manufacture of release mechanisms and bomb sights.....	268,648
4. Overhauling and repair work at the arsenals.....	3,500,000
5. Overhauling, preparing for storage grenades, signal pistols, pyrotechnics, etc.....	416,642
	<hr/> 4,396,790

**ORDNANCE STORES AND SUPPLIES.**

For overhauling, cleaning, repairing, and preserving ordnance and ordnance stores in the hands of troops and at the arsenals, posts, and depots; for purchase and manufacture of ordnance stores to fill requisitions of troops; for Infantry, Cavalry, and Artillery equipments, including horse equipments for Cavalry and Artillery:

*Previous appropriations and contract authorizations.*

Fiscal year.	Estimated.	Appropriations.	Contract authorization.	Date of act.
1905.....	\$1,625,000	\$1,625,000		Apr 22, 1904
1906.....	1,254,922	1,254,922		Mar. 2, 1905
1907.....	1,000,000	1,000,000		June 12, 1906
1908.....	1,000,000	1,000,000		Mar. 2, 1907
1909.....	900,000	900,000		May 11, 1908
1910.....	00	1,000,000		Mar. 3, 1909
1911.....	00	800,000		Mar. 23, 1910
1912.....	00	800,000		Mar. 3, 1911
1913.....	00	700,000		Aug. 24, 1912
1914.....	00	700,000		Mar. 2, 1913
1915.....	00	700,000		Apr 27, 1914
1916.....	29	1,000,000		Mar. 4, 1915
1917.....	25	9,500,000		Aug. 29, 1916
1918.....	00	10,000,000		May 12, 1917
1919.....	00	106,550,000		June 16, 1917
1919.....	00	113,520,000		Oct. 6, 1917
1919.....	00	19,826,585		Mar 28, 1918
1919.....	00	93,400,000	\$350,229,260	July 9, 1918
1919.....	00		97,000,000	Nov. 4, 1918
1920.....	90			

*Ordnance stores and supplies, 1920.*

Original estimate.....	\$544,600,300
Submitted to Congress.....	54,460,030
To be withdrawn.....	50,163,240
Net.....	<hr/> 4,396,790

AUTOMATIC MACHINE RIFLES, 1920.

For the purchase, manufacture, test, repair, and maintenance of automatic machine rifles or other automatic or semiautomatic guns, including their mounts, sights, and equipments and the machinery necessary for their manufacture, \$3,075,000

Summary of estimate.

1. Experimental work on machine guns and automatic rifles.....	\$5,000 ..
2. Overhauling and maintaining machine guns in the service .....	750,000 ..
3. Purchase of real estate and buildings for manufacturing of machine guns. 1,000 ..	1,000 ..
4. Operating machine-gun shop.....	500 ..
Total.....	3,075,000 ..

AUTOMATIC RIFLES.

For purchase, manufacture, test, repair, and maintenance of automatic machine rifles or other automatic or semiautomatic guns, including their mounts, sights, and equipments and the machinery necessary for their manufacture:

Previous appropriations and contract authorizations.

Fiscal year.	Estimated.	Appropriation.	Contract authorizations	Date ..
1904.....	\$140,000	\$75,000	.....	
1905.....	1,407,500	210,229	.....	
1906.....	70,000	70,000	.....	
1907.....	40,000	33,000	.....	June ..
1908.....	70,000	30,000	.....	Mar ..
1909.....	110,000	40,000	.....	Mar ..
1910.....	200,000	200,000	.....	Mar ..
1911.....	150,000	150,000	.....	Mar ..
1912.....	200,000	200,000	.....	Mar ..
1913.....	200,000	150,000	.....	Aug ..
1914.....	150,000	.....	\$150,000	Mar ..
1915.....	150,000	.....	.....	Apr ..
1916.....	120,000	150,000	.....	Mar ..
1917.....	1,400,000	6,000,000	.....	Aug ..
1918.....	7,350,000	5,000,000	.....	May ..
1918.....	65,900,000	65,900,000	.....	June ..
1918.....	170,277,000	170,277,000	.....	Oct ..
1918.....	168,020,000	50,000,000	\$118,020,000	Dec ..
1919.....	574,870,000	237,114,000	337,756,000	July ..
1919.....	150,005,004	.....	101,002,000	Nov ..
1920.....	3,075,000	.....	.....	

<sup>1</sup> No use was made of this authorization, as test of a new gun was in progress.  
<sup>2</sup> Converted into cash by 1919 Army bill.

Automatic machine rifle, 1920.

Original estimate.....	\$548,354 ..
Submitted to Congress.....	58,825 ..
To be withdrawn.....	55,760 ..
Net.....	3,075,000 ..

ARMORED MOTOR CARS, 1919-20.

For the purchase, manufacture, test, repair, and maintenance of armored motor cars, to remain available until the end of the fiscal year 1920, \$500,000.

Summary.

1. For test and experimental work in connection with development of armored motor cars.....
- \$500,000

ARMORED MOTOR CARS.

For purchase, manufacture, test, repair, and maintenance of armored motor cars

Previous appropriations and contract authorizations.

Fiscal year.	Estimated.	Appropriated.	Contract au- thorizations.	Date of act.
1916.....		\$50,000		Mar. 4, 1915
1917.....	\$150,000	500,000		Aug. 29, 1916
1918.....	1,508,000	600,000		May 12, 1917
1918.....	4,500,000	3,900,000		June 15, 1917
1918.....	112,300,000	36,750,000	<sup>1</sup> \$75,550,000	Oct. 6, 1917
1919.....	347,972,500	75,550,000	272,422,500	July 9, 1918
1919.....	217,687,500		134,217,500	Nov. 4, 1918
1920.....	500,000			

<sup>1</sup> Converted into cash by 1919 Army bill.

Armored motor cars, 1920.

Original estimate.....	\$611,460,000
Submitted to Congress.....	61,146,000
To be withdrawn.....	60,646,000
Net.....	500,000

**NATIONAL TROPHY AND MEDALS FOR RIFLE CONTESTS.**

For the purpose of furnishing a national trophy and medals and other prizes to be provided and contested for annually, under such regulations as may be prescribed by the Secretary of War, said contest to be open to the Army, Navy, Marine Corps, and the National Guard or Organized Militia of the several States, Territories, and of the District of Columbia, members of rifle clubs, and civilians, and for the cost of the trophy, prizes, and medals herein provided for, and for the promotion of rifle practice throughout the United States, including the reimbursements of necessary expenses of members of the National Board for the Promotion of Rifle Practice, to be expended for the purposes hereinbefore prescribed under the direction of the Secretary of War, \$10,000.

This appropriation of \$10,000 made annually, is handled entirely by the Office of the Assistant Secretary of War. The Ordnance Department merely acts as disbursing agent and has administrative supervision of the disbursement accounts.

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# ARMY APPROPRIATION BILL

1920



## CORPS OF ENGINEERS

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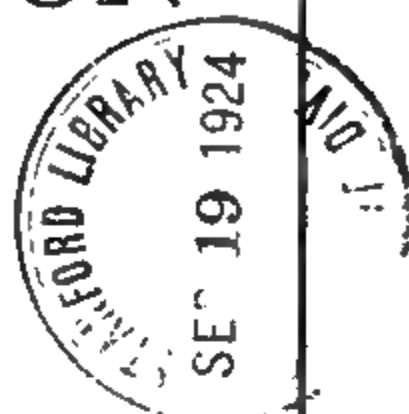
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### PART 10



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1919



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CORPS OF ENGINEERS.

1920 ESTIMATES.

Army bill.

	Amount originally submitted.	Amount now requested.
Engineer depots (p. 766).....	\$75,000	This estimate can be eliminated on assumption that director of storage will provide for expenses of Engineer depots.
Engineer School, Washington, D. C. (p. 769).	30,000	Regular estimate..... \$30,000 Supplemental estimate..... 20,000
		Total..... 50,000 (Request also made for change in language.)
Engineer equipment of troops (p. 771).....	8,000,000	For purchase, storage, and traffic..... \$2,340,892.74 For Engineers..... 628,407.22
		Total..... 2,912,000.00
Civilian assistants to Engineer officers (p. 787).	100,000	\$100,000.
Engineer operations in the field (p. 790).....	80,000,000	\$30,350,000.
Contingencies, Engineer Department, Philippine Islands (p. 836).	3,000	\$3,000.
Military surveys and maps.....	101,000	\$638,000.
Engineer School buildings and College of Military Research, Camp Humphreys (p. 841).		\$3,000,000.

# ESTIMATES AND APPROPRIATIONS TO DATE.

[Since 1912.]

## ENGINEER DEPOTS.

Fiscal year.	Estimate.			Appropriation.		
	Inci- dentals.	Instru- ments.	Total.	Inci- dentals.	Instru- ments.	Total.
1912.....	\$20,000	\$10,000	\$30,000	\$20,000	\$10,000	\$30,000
1913.....	20,000	10,000	30,000	20,000	10,000	30,000
1914.....	20,000	10,000	30,000	20,000	10,000	30,000
1915.....			30,000			25,000
1916.....			25,000			25,000
1916-1917 <sup>1</sup> .....			10,000			10,000
1917.....			27,500			27,500
1918.....			35,000			35,000
1919.....			50,000			50,000

<sup>1</sup> Deficiency appropriation.

## ENGINEER SCHOOL, WASHINGTON BARRACKS, D. C.

Fiscal year.	Estimate.	Appropriation.
1912.....	\$25,000	\$25,000
1913.....	25,000	25,000
1914.....	25,000	25,000
1915.....	25,000	25,000
1916.....	25,000	25,000
1917.....	25,000	31,000
1918.....	30,000	30,000
1919.....	30,000	30,000

## ENGINEER EQUIPMENT OF TROOPS.

Fiscal year.	Estimate.		Appropriation.	
	Equipment.	Pontoon shed.	Equipment.	Pontoon shed.
1912.....	\$75,000	\$15,000	\$75,000	\$15,000
1913.....	90,000		90,000	
1914.....	50,000	15,000	50,000	15,000
1915.....	50,000		50,000	
1916.....	50,000		48,000	
1916-1917 <sup>1</sup> .....	500,000		500,000	
1917.....	660,000		1,000,000	
1918.....	1,174,000		1,174,000	
1917-1918 <sup>2</sup> .....	47,976,000		47,976,000	
1919.....	135,000,000		135,000,000	

<sup>1</sup> Deficiency acts July 1 and Sept. 8, 1916.

<sup>2</sup> Deficiency acts June 15 and Oct. 6, 1917.

## CIVILIAN ASSISTANTS TO ENGINEER OFFICER.

Fiscal year.	Estimate.	Appropriation.
1912.....	\$42,000	\$42,000
1913.....	40,000	40,000
1914.....	40,000	40,000
1915.....	40,000	40,000
1916.....	40,000	40,000
1916-17 <sup>1</sup> .....	10,000	10,000
1917.....	75,000	75,000
1918.....	75,000	75,000
1919.....	115,000	90,000

<sup>1</sup> Deficiency appropriation, July 1, 1916.

CONTINGENCIES, ENGINEER DEPARTMENT, PHILIPPINE ISLANDS.

Fiscal year.	Estimate.	Appropriation.
1912.....	\$5,000	\$5,000
1913.....	5,000	5,000
1914.....	5,000	5,000
1915.....	5,000	5,000
1916.....	5,000	4,000
1917.....	4,000	4,000
1918.....	4,000	4,000
1919.....	4,000	2,500

ENGINEER OPERATIONS IN THE FIELD.

Fiscal year.	Estimate.	Appropriation.
1916-1917 <sup>1</sup> .....	\$1,200,000	\$1,200,000
1917.....	100,000	100,000
1918.....	300,000	300,000
1917-1918 <sup>2</sup> .....	350,500,000	350,500,000
1919.....	892,000,000	892,000,000
1919 <sup>3</sup> .....	335,000,000	126,250,000
		1,018,250,000

<sup>1</sup> Deficiency acts July 1, and Sept. 8, 1916.  
<sup>2</sup> Deficiency acts June 15, 1917, Oct. 6, 1917, and Mar. 28, 1918. This latter act also contained authorization for incurring additional obligations of \$70,000,000 but it was not necessary to make use of this authorization.  
<sup>3</sup> Deficiency act Nov. 4, 1918. This act also contained authority for incurring additional obligations of \$200,000,000 but it was not necessary to make use of it.

MILITARY SURVEYS AND MAPS.

Fiscal year.	Estimate.	Appropriation.
1918.....	\$200,000	\$200,000
1918 <sup>1</sup> .....	1,500,000	500,000
1919.....	1,000,000	850,000
1920.....	638,000	.....

<sup>1</sup> Deficiency act.

## PER DIEM ALLOWANCE.

### LANGUAGE IN ESTIMATES.

Where the expenses of persons engaged in field work or traveling on official business outside of the District of Columbia and away from their designated posts of duty are chargeable to appropriations of the Engineer Department contained in the Army appropriation act for the fiscal year nineteen hundred and twenty, a per diem rate of \$4 may be allowed in lieu of subsistence. (Act July 9, 1918, vol. 41, p. —, sec. 2).

The above language is included in the annual estimates merely to comply with the following provision of law:

That the heads of executive departments and other Government establishments are authorized to prescribe per diem rates of allowance not exceeding \$4 in lieu of subsistence to persons engaged in field work or traveling on official business outside of the District of Columbia and away from their designated posts of duty when not otherwise fixed by law. *For the fiscal year nineteen hundred and sixteen and annually thereafter estimates of appropriations from which per diem allowances are to be paid shall specifically state the rates of such allowances.* (Sec. 13, sundry civil act of Aug. 1, 1914, 38 Stats., 680.)

The above provision of law already provides all the authority desired. While this is the case, the language quoted in italics requires the proposed per diem allowance to be indicated in the annual estimates each year.

## DIVISION OF ESTIMATES.

*Confidential*

WAR DEPARTMENT, OFFICE OF THE CHIEF OF STAFF, PURCHASE, STORAGE, AND  
TRAFFIC DIVISION.

OFFICE OF THE DIRECTOR OF FINANCE,  
Washington, November 29, 1918.

From: Gen. H. M. Lord, Director of Finance.

To: The Chief of Engineers.

Subject: Requirements data for 1920 appropriation bills.

1. The Chief of Staff has directed the Director of Finance to prepare a new set of estimates for the 1920 appropriation bills on the assumed basis of an army of 500,000 men, all in the United States, excepting the normal prewar number of men in the insular possessions. The Director of Finance is further informed that the estimates should be based on the organization of one skeletonized field army, consisting of twenty combat divisions and four base divisions. The 500,000 total strength includes the total army personnel, staff, and other organizations.

2. It is assumed that the appropriations for the year ending June 30, 1919, will be used during the present year or will lapse, and that they will not be available for the expenditures of the fiscal year 1920.

3. It is assumed that the stocks now on hand and the stocks resulting from the completion of existing contracts will be sufficient for the purposes of the fiscal year 1919 and will also be sufficient for the *initial issue* of the proposed army of 500,000 men for the fiscal year 1920.

4. It is, therefore, requested that your requirements data for 1920 appropriation bills be based upon the *maintenance* of an army of 500,000 men in the *United States*, including the normal prewar number of men in the insular possessions.

5. You are requested *not* to provide in such 1920 estimates for any army of occupation in Europe after July 1, 1919. If the Chief of Staff furnishes us with additional information as to the army of occupation in Europe *after* July 1, 1919, a separate set of estimates will be made for that army. As the chairmen of the several appropriation committees of the Congress and the Chief of Staff are vitally interested in the estimated cost of *maintaining* the proposed army of 500,000 men during the fiscal year 1920, you are requested to expedite the preparation of such appropriation estimates.

6. In preparing estimates for presentation to the Congress, it will be the policy of the Office of the Director of Finance to classify under "Quartermaster Corps" all items of standard procurement, the procurement of which has been consolidated under the Director of Purchase and Storage. All special and technical items which have not been consolidated under the Director of Purchase and Storage will be classified under the names of the respective War Department agencies charged with the duty of making such special and technical procurements. For example, items that during the prewar period were procured by the Chief of Engineers and are now procured by the Director of Purchase and Storage will be classified under the statutory title of "Quartermaster Corps" while estimates for special engineering projects will be classified under the statutory title of "Engineer Corps." The Director of Purchase and Storage is requested, therefore, to prepare the estimates for all articles of standard procurement, while the chief of each supply corps is requested to prepare the estimates for all items hitherto estimated for by that supply corps, excepting standard items that have been consolidated under the Director of Purchase and Storage. It is suggested that the chief of the requirements division, Office of the Director of Purchase and Storage, should secure information from the several supply corps necessary in the preparation of the requirements for all *standard* procurements. It will be to the advantage of this office if the requirements division will plainly indicate each item that was formerly estimated for by each one of the supply corps and that is now being estimated for by the Director of Purchase and Storage under the terms of the consolidation.

By authority of the Director of Purchase, Storage, and Traffic.

(Signed)

H. M. LORD,

Brigadier General,

Assistant to Director of Purchase, Storage, and Traffic,

Director of Finance.

DECEMBER 23, 1918.

From: The Chief of Engineers.

To: The Director of Finance, Purchase, Storage, and Traffic Division, General Staff, Munitions Building, Nineteenth and B Streets NW., Washington, D. C.  
(Attention Mr. George E. Frazer, Assistant Director of Finance, Room 3008.)

Subject: Army estimates.

1. With reference to your letter of November 29, 1918, subject, "Requirements data for 1920 appropriation bills," there are attached hereto sheets showing revised estimates for "Engineer operations in the field" and "Engineer equipment of troops." In making the revision called for it is necessary to have a clear understanding of the basis on which these funds are to be expended. The understanding of the Chief of Engineers, based on verbal statements from the Chief of Staff and the Director of Purchase, Storage, and Traffic, is that such procurements as are automatic in their requirements—i. e., for articles of standard classes fixed in amount by the number of troops to be supplied—are to be made by the Division of Purchase, Storage, and Traffic direct; further, that supplies of standard articles needed intermittently from time to time but not automatically fixed in nature or amount and dependent on unforeseeable requirements of the service are to be procured by the Division of Purchase, Storage, and Traffic on requisitions from the head of the department responsible for the proper execution of the work and paid for by allotments made at his request. Exceptional needs of technical machinery or special technical apparatus are to be met by the direct action of the head of the bureau responsible for the work acting in cooperation with the Division of Purchase, Storage, and Traffic, as may be most advantageous for the service. This course seems reasonable, since on sound business principles a man responsible for the proper conduct of any work must have authority to control expenditures for such work.

2. Based on the above, the item of appropriation for "Engineer equipment of troops" must be divided into two parts. The major part, from which is to be procured the standard fixed equipment for the Army, should be placed under the control of the Director of Purchase, Storage, and Traffic, and he should be held responsible for the proper supply of the Army as to such articles. A smaller part must be left under the control of the Chief of Engineers, to provide the funds necessary for exceptionally required articles of equipment, for nonstandard articles, and for such development work as may be necessary in connection with the betterment of the existing equipment.

3. The item of "Engineer operations in the field" must all be left at the disposal of the Chief of Engineers, since the exact use of this item of appropriation can not be foreseen and must depend on Army requirements subject to continual change.

4. The accompanying estimates replace previous estimates submitted for the appropriations "Engineer operations in the field" and "Engineer equipment of troops," which it has been necessary to change as a result of changed instructions and changes in the military situation. No item for "Engineer equipment of troops" to cover the equipment of forces in France during 1920 has been included, as it is estimated that sufficient equipment has already been shipped abroad. An item of \$28,000,000, to cover "Engineer operations in the field" in France during 1920, is submitted, as that estimate has been received from the American Expeditionary Forces, and as it will be necessary to carry on Engineer activities covered by this appropriation as long as our forces remain abroad.

5. With reference to the estimate now before Congress for "Engineer depots," you are informed that in view of the transfer of all Engineer depots to the jurisdiction of the Director of Purchase, Storage, and Traffic, this estimate may be eliminated, it being assumed that the requirements of the former Engineer depots will be taken care of by estimates submitted by the Purchase, Storage, and Traffic Division.

6. In order to set forth the present situation with regard to Engineer estimates contained in the Army bill (excluding military surveys and maps), the following tabulation is given:

#### ENGINEER DEPOTS.

This estimate was originally submitted in the sum of \$75,000, but, as indicated in paragraph 2 above, may be eliminated upon the assumption that the requirements of the Engineer depots will be taken care of by estimates submitted by the Purchase, Storage, and Traffic Division.

#### ENGINEER SCHOOL.

Attention is invited to letter from this office dated December 2, 1918, submitting an estimate of \$50,000 for "Engineer school," to take the place of the estimate of \$30,000 previously submitted for "Engineer school, Washington, District of Columbia."

## ENGINEER EQUIPMENT OF TROOPS.

Originally submitted as \$80,000,000; cut to \$8,000,000 by the Director of Finance after the signing of the armistice; estimate now to be submitted, \$2,912,000. Of this amount \$2,286,592.78 is for articles to be procured by the Division of Purchase, Storage, and Traffic, and \$625,407.22 is for expenditure by the Chief of Engineers.

## CIVILIAN ASSISTANTS TO ENGINEER OFFICERS.

Amount of estimate submitted, \$100,000. No change is made in this estimate, as the requirements which it is intended to cover are not affected by the change in the military situation.

## ENGINEER OPERATIONS IN THE FIELD.

Originally submitted as \$800,000,000; cut to \$80,000,000 by the Director of Finance; amount which should now be submitted, \$30,350,000.

## CONTINGENCIES, ENGINEER DEPARTMENT, PHILIPPINE ISLANDS.

Amount of estimate submitted, \$3,000. No change is necessitated in this estimate by the change in the military situation.

## BUILDINGS, ENGINEER SCHOOL, CAMP A. A. HUMPHREYS, VA.

A supplemental estimate of \$2,200,000 for this purpose was submitted to the Director of Finance by letter from this office dated December 2, 1918.

## BUILDING, COLLEGE OF MILITARY RESEARCH, CAMP A. A. HUMPHREYS, VA.

A supplemental estimate of \$800,000 for this purpose was submitted to the Director of Finance by letter of December 2, 1918.

W. M. BLACK,  
Major General, Chief of Engineers.

E. & O. Div.]

[S. C. 1011.]

## PURCHASE, STORAGE, AND TRAFFIC DIVISION, GENERAL STAFF.

Supply Circular }  
No. 101. }

WAR DEPARTMENT,  
Washington, October 26, 1918.

Subject: Articles and commodities to be procured by Corps of Engineers.

1. With reference to Supply Circular No. 99, paragraph 1, the Corps of Engineers will continue to procure the following articles and commodities:

Locomotives of all kinds.

Railway cars and rolling stock of all kinds.

Railway shop machinery and tools, except standard machine tools.

Marine equipment of all kinds, including tugs, barges, lighters, derircks, etc., which are purchased in the United States in a knocked-down condition for transportation to and erection in France.

Railway steam shovels and pile drivers and special cranes, including gantries, dock cranes, ship cranes, wrecking cranes, but not including locomotive cranes of standard design.

Searchlights and auxiliaries.

Ranging equipment.

Materials, equipment, and supplies for river and harbor and seacoast fortification work.

Purchases made for experimental and research work, provided that as soon as such material adopted as a result of such experimental and research work is standardized the procurement of such material shall thereafter be performed by the Office of the Director of Purchase and Storage.

By authority of the Secretary of War:

GEO. W. GOETHALS,  
Major General, Assistant Chief of Staff,  
Director of Purchase, Storage, and Traffic.

## ENGINEER DEPOTS.

Estimate originally submitted for 1920..... \$75, 000. 00

This estimate covers the expense of maintaining and operating the regular peace-time Engineer depots. As these depots have now been taken over by the Director of Storage, this estimate may be eliminated upon the assumption that the expenses of these depots will be taken care of upon estimates submitted by the Director of Storage.

The following data is in support of the estimate as originally submitted:

### LANGUAGE OF ESTIMATE.

Same as appropriation for 1919 and prior years.

### PURPOSE OF APPROPRIATION.

Payment of incidental expenses of the Engineer depots, including fuel, lights, chemicals, stationery, hardware, etc., pay of civilian employees, extra-duty pay to soldiers, repair of buildings, machinery and instruments, etc. The 1920 estimate is based only on providing for the expenses of the depots on a peace-time basis. The extraordinary expenses, due to the present war, such as the establishment of the embarkation depots, etc., are to be taken care of by the appropriation for "Engineer operations in the field."

### BASIS OF 1920 ESTIMATE.

Maintenance and operation of the following Engineer depots:

Engineer depot, Fort Leavenworth.....	\$4, 300
Engineer depot, Fort Douglas.....	3, 000
Engineer depot, Fort Sam Houston.....	56, 968
Engineer depot, Corozal.....	2, 500
Engineer depot, Honolulu.....	1, 550
Engineer depot, Manila.....	7, 210
 Total.....	 <u>75, 528</u>

For details of above estimate, see page 767.

### APPROPRIATION FOR LAST FIVE YEARS.

1916.....	\$25, 000
1916-17 (deficiency).....	10, 000
1917.....	27, 500
1918.....	35, 000
1919.....	50, 000

### REASON FOR INCREASE IN 1920 ESTIMATE.

For the last two years a considerable proportion of the expense of operating the Fort Sam Houston depot has been paid from the appropriation for "Engineer operations in the field," on account of the fact that this depot was established to take care of the work brought on by the Mexican situation, the Engineer expenses in connection with which were paid from the appropriation for "Engineer operations in the field." Practically all of the work of this depot is now, however, connected with the issue of Engineer equipment and applies to the Regular Army, National Army, and National Guard troops in the Southern Department, and, for that reason, it is believed that the expense of operating the depot should be paid from the regular appropriation for "Engineer depots." The estimate for 1920 is increased for that reason.



Expenditures, 1918, and total amounts expended and obligated to Dec. 1.

	Expenditures, 1918.	Total ex- pended and obligated, 1919, up to Dec. 1.
District engineer, second New York district.....	\$312.50	\$129.17
General Engineer depot officer.....	12,330.00	7,500.00
Engineer depot officer, Fort Leavenworth, Kan.....	1,580.00	547.85
Engineer depot officer, Fort Sam Houston, Tex.....	11,000.00	12,407.46
Engineer depot officer, Vancouver Barracks, Wash.....	1,388.81	.....
Engineer depot officer, Fort Douglas, Utah.....	.....	506.06
Department Engineer, Hawaiian department.....	750.00	297.73
Department Engineer, Panama Canal department.....	2,000.00	568.79
Department Engineer, Philippine department.....	4,720.00	217.49
	34,081.31	22,174.55

NOVEMBER 18, 1918.

BASIS.

ENGINEER DEPOT, FORT LEAVENWORTH, KANS.

1. Current expenses:		
(a) Pay of civilian employees.....	\$1,900.00	
(b) Extra-duty pay to soldiers.....		
(c) Lumber and materials for packing and crating Engi- neer supplies.....	150.00	
(d) Miscellaneous, including fuel, light, chemicals, sta- tionery, etc.....	500.00	
2. New equipment, including hardware, machinery, and other depot or office equipment.....		
3. Maintenance of equipment.....	1,500.00	
4. Repair of instruments.....	250.00	
5. Contingencies.....		
		\$4,300.00

ENGINEER DEPOT, FORMERLY AT VANCOUVER BARRACKS, WASH., NOW  
AT FORT DOUGLAS, UTAH.

1. Current expenses:		
(a) Pay of civilian employees.....		
(b) Extra-duty pay for soldiers.....		
(c) Lumber and material for packing and crating Engi- neer supplies.....	\$250.00	
(d) Miscellaneous, including fuel, light, chemicals, sta- tionery, etc.....	200.00	
2. New equipment, including hardware, machinery, and other depot or office equipment.....	1,000.00	
3. Maintenance of equipment.....	500.00	
4. Repair of instruments.....	350.00	
5. Contingencies.....	700.00	
		3,000.00

ENGINEER DEPOT, HONOLULU, HAWAII.

1. Current expenses:		
(a) Pay of civilian employees.....		
(b) Extra-duty pay to soldiers.....	400.00	
(c) Lumber and materials for packing and crating Engi- neer supplies.....	150.00	
(d) Miscellaneous, including fuel, lights, chemicals, sta- tionery, etc.....	150.00	
2. New equipment, including hardware, machinery and other depot or office equipment.....	300.00	
3. Maintenance and equipment.....	100.00	
4. Repairs of instruments.....	250.00	
5. Contingencies.....	200.00	
		1,550.00

## ENGINEER DEPOT, MANILA, P. I.

1. Current expenses:		
(a) Pay of civilian employees.....	\$2,490.00	
(b) Extra-duty pay to soldiers.....		
(c) Lumber and materials for packing and crating Engineer supplies.....	150.00	
(d) Miscellaneous, including fuel, lights, chemicals, stationery, etc.....	300.00	
(e) Lights, water, paint, and other items in connection with maintenance of four warehouses for Engineer depot.....	720.00	
2. New equipment, including hardware, machinery, and other depot or office equipment.....	2,000.00	
3. Maintenance of equipment.....	650.00	
4. Repair of instruments.....	650.00	
5. Contingencies.....	250.00	
		<u>\$7,210.00</u>

## ENGINEER DEPOT, FORT SAM HOUSTON, TEX.

1. Current expenses:		
(a) Pay of civilian employees.....	\$36,768.00	
(b) Extra-duty pay to soldiers.....		
(c) Lumber and materials for packing and crating Engineer supplies.....	1,500.00	
(d) Miscellaneous, including fuel, lights, chemicals, stationery, etc.....	1,200.00	
2. New equipment, including hardware, machinery, and other depot or office equipment.....	2,000.00	
3. Maintenance of equipment.....	5,000.00	
4. Repair of instruments.....	500.00	
5. Contingencies.....	10,000.00	
		<u>56,968.00</u>

## ENGINEER DEPOT, COROZAL, CANAL ZONE.

1. Current expenses:		
(a) Pay of civilian employees:		
Clerk ( $\frac{3}{4}$ time), at \$125 per month <sup>1</sup> .....	375.00	
Civilian labor.....	200.00	
(b) Extra-duty pay to soldiers, storekeeper, clerk, 2 mechanics.....	431.20	
(c) Lumber and materials for packing and crating Engineer supplies.....	150.00	
(d) Miscellaneous, including fuel, electric power, lights, stationery, etc.....	300.00	
2. New equipment, including shelving, desk, table, filing cabinet, shafting, drill riveter, pipe threader, miscellaneous tools to equip Engineer depot.....	300.00	
3. Maintenance of equipment.....	300.00	
4. Repair of instruments.....	300.00	
5. Contingencies.....	143.80	
		<u>2,500.00</u>
		<u>75,528.00</u>

<sup>1</sup> Clerk (three-fourth time chargeable to other appropriation).

## ENGINEER SCHOOL.

Total estimate submitted for 1920 ..... \$50, 000

This estimate was submitted in two amounts, as follows:

Regular annual estimate.....	\$30, 000
Supplemental estimate.....	20, 000

Total.....	50, 000
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1. As submitted to Congress, this estimate provides for the equipment and maintenance of the Engineer School at Washington Barracks. It is desired to request the committee to make certain changes in this language. These changes are indicated in the language quoted below, omissions being indicated by lining out the parts to be omitted and additions being indicated by italics:

### LANGUAGE OF ESTIMATE.

"ENGINEER SCHOOL, (1) ~~WASHINGTON, DISTRICT OF COLUMBIA~~: Equipment and maintenance of the Engineer School (1) ~~at Washington Barracks, District of Columbia~~, including purchase and repair of instruments, machinery, implements, models, and materials for the use of the school and for instruction of Engineer troops in their special duties as (2) ~~sappers and miners, etc.~~; for land mining, pontoniering, and signaling; for purchase and binding of professional works and periodicals of recent date treating on military and civil engineering and kindred scientific subjects for the library of the (1) ~~United States~~ Engineer School; for incidental expenses of the school, including chemicals, stationery, hardware, machinery, and boats; for pay of civilian clerks, draftsmen, electricians, mechanics, and laborers; compensation of civilian lecturers and payment of tuition fees of student officers at civil technical institutions; for unforeseen expenses; for travel expenses of officers on journeys approved by the Secretary of War and made for the purpose of instruction: *Provided*, That the traveling expenses herein provided for shall be in lieu of mileage and other allowances; and to provide for means for the theoretical and practical instruction at the Engineer School by the purchase of textbooks, books of reference, scientific and professional papers, and for other absolutely necessary expenses, \$30,000."

The reasons for this change are as follows:

(1) It is intended to conduct a portion of the school at Camp A. A. Humphreys, Va., this school being in addition to that at Washington Barracks. It is desired, therefore, to make the appropriation applicable to the expenses of the Engineer School both at Washington Barracks and at Camp Humphreys. (2) The special duties of Engineer troops now include many duties in addition to sapping and mining, and it is desirable that the language of the appropriation be modified so as to include these other duties. Some of the special duties performed by the Engineers during the present war, in addition to sapping and mining, were as follows: Railway-construction operation and maintenance, lumbering operations, road construction, water-supply work, quarrying, surveying and printing, electrical and mechanical work of all kinds, crane operation, camouflage work, searchlight operation, work on inland waterways, dock construction, ship repair work, work on sound ranging, etc.

2. The appropriations for the maintenance of the Engineer School for the last five years have been as follows:

Fiscal year 1915.....	\$25, 000
Fiscal year 1916.....	25, 000
Fiscal year 1917.....	25, 000
Fiscal year 1918.....	30, 000
Fiscal year 1919.....	30, 000

### THE REASONS FOR INCREASE TO \$50,000 FOR FISCAL YEAR 1920.

(1) The number of student officers who will be in attendance at the Engineer School for the next few years will be largely in excess of the number who have attended the school during the last few years. The entire quota of Engineer officers received from graduates of the Military Academy last year were graduated two years ahead of time

on account of the war and are now to complete their courses at the Engineer School. It is contemplated that the number of student officers who will attend this school during the fiscal year 1920 will be approximately 125, while the number who have attended the school within the last few years has varied from 15 to 40 per year. It is therefore necessary to provide funds for the instruction of the additional number.

3. The general purposes for which these funds will be required are as follows:

Current expenses:

- |   |          |
|---|----------|
| (a) Pay of civilian clerks electricians, mechanics, and laborers..... | \$27,000 |
| (b) Miscellaneous, including chemicals, stationery, etc.....          | 4,500    |

New equipment:

- |   |        |
|---|--------|
| (a) Instruments, hardware, machinery, implements, boats, models, and materials for the use of the school and for instruction purposes....   | 11,000 |
| (b) Purchasing and binding of textbooks, books of reference, scientific and professional papers, professional works and periodicals of recent date, treating of military and civil engineering and kindred scientific subjects..... | 1,750  |

Maintenance of equipment, including repairs of and materials to repair, machinery, etc.....	3,500
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Contingencies and unforeseen expenses.....	2,250
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Total.....	50,000
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STATUS OF 1919 APPROPRIATION.

4. Up to December 1, 1918, the total amount expended and obligated from the appropriation for "Engineer School, Washington, D. C., 1919." was \$21,594.06, leaving an available balance of \$8,405.92. This balance will all be required for expenditure during the remainder of the current fiscal year.

# ENGINEER EQUIPMENT OF TROOPS.

Language of estimate same as 1919 appropriation.

TOTAL ESTIMATE SUBMITTED 1920.....	\$2, 912, 000. 00
This appropriation should be assigned for expenditure as follows:	
To the Director of Purchase, Storage, and Traffic.....	2, 286, 592. 78
(This amount covers standard articles of Engineer equipment.)	
To the Chief of Engineers.....	625, 407. 22
(This covers nonstandard equipment and development work.)	
Total.....	2, 912, 000. 00

## BASIS OF ESTIMATE.

This estimate covers the estimated cost of providing Engineer equipment for an army of five corps of four combat divisions each plus four depot divisions, including corps and army troops. The following table shows the details of this estimate:

A. Funds for Engineer equipment of standard classes fixed in amount by the number of troops, which will be automatically supplied by the Director of Purchase, Storage, and Traffic. For information as to classes of articles covered by this estimate see Engineer equipment tables.

### 1. Standard equipment for 1 set of army troops:

Total cost of initial equipment and supplies.....	\$301, 227. 78
Less portion on hand and available.....	68, 760. 98
Amount required to complete initial equipment and supplies.....	\$232, 466. 80
Maintenance and replacement of complete initial equipment and supplies (20 per cent of \$301,227.78).....	60, 245. 55
100 per cent extra supplies.....	52, 984. 75
Amount added (20 per cent) to take care of unforeseen changes in equipment for army troops.....	69, 139. 42

Total for standard equipment for army troops.... \$414, 836. 52

### 2. Standard equipment for 5 sets of corps troops:

Total cost of initial equipment and supplies.....	\$802, 522. 90
Less portion on hand and available.....	736, 419. 70
Amount required to complete initial equipment and supplies.....	66, 103. 20
Maintenance and replacement of complete initial equipment and supplies (20 per cent of \$802,522.90).....	160, 504. 58
100 per cent extra supplies.....	45, 782. 20

Total for standard equipment for corps troops... 272, 389. 98

687, 226. 50

3. *Standard equipment for 24 Infantry divisions (20 combat and 4 base):*

Total cost of initial equipment and supplies.....	\$3,315,963.12
Less portion on hand and available.....	2,894,757.22
Amount required to complete initial equipment and supplies.....	\$421,205.90
Maintenance and replacement of complete initial equipment and supplies (20 per cent of \$3,315,963.12).....	663,192.62
100 per cent extra supplies.....	514,967.76

Total for divisional troops.....\$1,599,366.28

Total for standard equipment (to be assigned to Director of Purchase, Storage, and Traffic)..... \$2,286,592.78

B. Funds for Engineer equipment other than that automatically supplied by Director of Purchase, Storage, and Traffic. For information as to articles covered by this estimate see page 772.

1. *Nonstandard equipment for 1 set of army troops:*

Total cost of initial equipment.....	\$965,000.00
Portion on hand and available.....	933,050.00
Amount required to complete initial equipment and supplies.....	\$31,950.00
Maintenance and replacement of complete initial equipment (20 per cent of \$965,000).....	193,000.00

Total for nonstandard equipment for army troops.. \$224,950.00

2. *Investigations and experiments:*

Sound ranging.....	\$20,000.00
Searchlights.....	200,000.00
Pontoon and bridge.....	50,000.00
General engineering investigation.....	60,000.00

Total (see p. 773 for further details)..... 330,000.00

3. *Contingencies*..... 70,457.22

Total (to be assigned to Chief of Engineers)..... \$625,407.22

Grand total..... 2,912,000.00

For status of 1919 appropriation see page 780.

For status of 1918 appropriation see page 786.

B. Funds for Engineer equipment other than that automatically supplied by Director of Purchase, Storage, and Traffic:

1. *Nonstandard equipment for one set of army troops*..... \$224,950.00

This estimate is made up as follows:

For searchlight regiment—155 searchlights, at \$5,000..... 775,000.00

For sound and sight ranging battalion:

15 sound ranging sets, at \$4,500.....	\$67,500
30 flash ranging sets, at \$150.....	4,500
90 flash ranging telescopes, at \$200.....	18,000
Wire and miscellaneous supplies.....	100,000
	190,000.00

Total cost of initial equipment..... 965,000.00

On hand and available:	
155 searchlights, at \$5,000 .....	\$775, 000
12 sound ranging sets, at \$4,500.....	54, 000
27 flash ranging sets, at \$150 .....	4, 050
Wire and miscellaneous supplies.....	100, 000
<hr/>	
Total on hand and available.....	\$933, 050. 00
<hr/>	
Required to complete initial equipment and supplies:	
3 sound ranging sets, at \$4,500.....	13, 500
3 flash ranging sets, at \$150 .....	450
90 flash ranging telescopes, at \$200.....	18, 000
<hr/>	
Total required.....	31, 950. 00
Maintenance and replacement of complete initial equipment (20 per cent of \$965,000).....	193, 000. 00
<hr/>	
Total estimated.....	224, 950. 00
INVESTIGATION AND EXPERIMENTS.....	330, 000
The details of this estimate are as follows:	

SOUND RANGING.

(For discussion of sound-ranging development see page 776.)

The estimate contemplates two stations: One for surface ranging for gun positions and subterranean sound detection, and one for airplane detection; one station to be located in the vicinity of an artillery range or proving ground, and one in the vicinity of a flying field. In each case a laboratory building to consist of a workshop and office, with suitable tool equipment, is contemplated. A civilian personnel consisting of one physicist at \$2,500 per annum and one mechanician at \$1,500 per annum should be provided in each case. It has been assumed in the estimate that further labor will be provided by military personnel. If such is not the case, some additional labor will have to be provided from time to time as required. The estimate is as follows:

Civilian personnel as above.....	\$8, 000
Construction of laboratories, at \$2,500 each.....	5, 000
Machinery:	
Lathes.....	\$600
Drill press.....	125
Milling machine.....	1, 200
Small tools, drill taps and dies, etc.....	575
<hr/>	
Total, one laboratory.....	2, 500
Total, two laboratories.....	5, 000
Miscellaneous material for experimental construction, consisting of magnet wire, mica hard rubber, insulation, brass and steel rod, sheet brass, sheet tin, etc., for one laboratory.....	1, 000
Total, two laboratories.....	2, 000
<hr/>	
Total, sound ranging.....	\$20, 000

SEARCHLIGHTS.

(For discussion of searchlight development work see page 777.)

Arcs:	
1 group 21 (500 A. H. I.).....	\$2, 000
1 group 22 (500 A. H. I.).....	2, 000
1 group 23 (intermittent).....	5, 000
1 group 24 (titanium) .....	2, 000
1 group 25 (thallium) .....	2, 000
1 group 26 (poulson).....	5, 000
1 group 27 (magnetite).....	2, 000
<hr/>	
	\$20, 000

**Mechanisms:**

1 type J.....	\$1, 000	
1 type K.....	1, 000	
1 type L.....	10, 000	
1 type M.....	2, 000	
1 type N.....	1, 000	
1 type O.....	4, 000	
1 type P.....	1, 000	
	<hr/>	\$20, 000

**Carbons:**

3 lots—class 1051.....	200	
10 lots—class 1052.....	1, 000	
10 lots—class 1053.....	1, 000	
2 lots—class 1054.....	100	
5 lots—class 1055.....	500	
3 lots—class 1056.....	200	
10 lots—class 1057.....	1, 000	
20 lots—class 1058.....	1, 000	
25 lots—class 1059.....	3, 000	
20 lots—class 1060.....	2, 000	
	<hr/>	10, 000

**Mirrors:**

5 process D.....	6, 000	
3 process E.....	4, 000	
2 process F.....	10, 000	
	<hr/>	20, 000

**Carriages:**

1 model 1918.....	500	
1 model 1919a.....	500	
2 model 1919b.....	1, 500	
1 model 1919c.....	1, 000	
2 model 1920.....	1, 500	
	<hr/>	5, 000

**Frames:**

4 style L.....	1, 000	
2 style S.....	2, 000	
2 style T.....	2, 000	
	<hr/>	5, 000

**Power units:**

1 model LF.....	6, 000	
1 model FW.....	9, 000	
1 model ST.....	15, 000	
	<hr/>	30, 000

**Searchlight towers:**

1 class PA.....	10, 000	
1 class PR.....	10, 000	
	<hr/>	20, 000

**Controls:**

2 class BB.....	2, 000	
1 class EG.....	6, 000	
1 class ES.....	4, 000	
2 class EW.....	8, 000	
	<hr/>	20, 000

**Tests:**

Photometry.....	2, 000	
Photography.....	5, 000	
Spectro photometry.....	1, 000	
Electrical tests.....	5, 000	
Mechanical tests.....	3, 000	
Road tests.....	2, 000	
Chemical tests.....	1, 000	
Thermal tests.....	1, 000	
	<hr/>	20, 000



## Finders:

5—Mark XX.....	\$500	
10—Mark XXI.....	3,000	
10—Mark XXII.....	3,500	
10—Mark XXIV.....	3,000	
		<hr/> \$10,000

## Apparatus (general):

10 voltmeters.....	500	
10 ammeters.....	500	
3 targets.....	250	
1 airplane (rent).....	9,000	
4 photometers.....	3,000	
2 telescopes.....	1,000	
3 cameras.....	1,000	
5 lenses.....	500	
1 range finder.....	1,000	
2 sets color screens.....	250	
6 sets telephones.....	250	
1 set wireless.....	1,000	
50 thermometers.....	50	
1 spectro photometer.....	1,000	
1 set batteries (storage).....	500	
20 fire extinguishers.....	200	
		<hr/> 20,000

Total for searchlights..... \$200,000

## PONTOON AND BRIDGE DEVELOPMENT.

(For discussion see p. 778.)

## Lumber:

60,000 feet white pine, at \$100 per M.....	\$6,000	
20,000 feet oak, at \$80 per M.....	1,600	
100,000 feet yellow pine, at \$74 per M.....	7,400	
		<hr/> 15,000

## Tractors and trailers:

2 5-ton tractors, at \$3,500.....	7,000	
4 trailers, at \$2,000.....	8,000	
2 trailers, at \$2,500.....	5,000	
		<hr/> 20,000

## Steel:

6,000 pounds at \$0.05.....	300	
20,000 pounds at \$0.23½.....	4,700	
		<hr/> 5,000

Civilian labor..... 10,000

Total for pontoon and bridge..... 50,000

## GENERAL ENGINEERING INVESTIGATIONS.

(For discussion see p. 779.)

## Engineering transportation:

5 trucks, at \$3,000 each.....	\$15,000	
5 trailers, at \$1,800 each.....	9,000	
2 experimental tool wagons, at \$500 each.....	1,000	
		<hr/> 25,000

## Special engineering equipment:

1 pile driver.....	5,000	
2 air compressors.....	4,000	
1 wrecker truck.....	4,000	
2 wheel scrapers.....	500	
3 graders.....	1,500	
1 roller.....	3,000	
Water supply equipment.....	3,000	
Cement and concrete machinery.....	2,000	
Pumps (drainage, etc.).....	2,000	
		<hr/> 25,000

## Map reproduction:

Relief-map processes.....	\$2,500	
Field lithography.....	1,000	
Mimeographic processes.....	500	
Photographic and other reproduction methods.....	1,000	
		<hr/> \$5,000

## Sapper regiment equipment:

Small tools.....	750	
Instruments.....	1,250	
		<hr/> 2,000

Engineer equipment (issued to other than Engineer troops)..... 2,000

## Pack outfits:

Pack saddles.....	500	
Saddle bags and saddle boxes.....	500	
		<hr/> 1,000

Total..... \$60,000

Grand total..... 330,000

## SOUND AND FLASH RANGING DEVELOPMENT WORK.

*Work accomplished.*—Upon the entrance of the United States into the war with Germany, the matter of sound and flash ranging was brought to the attention of this Government by the French Scientific Commission. This commission forcibly urged that an investigation of the matter be taken up at once for the purpose of determining upon a system to be used by the American Army, either by selecting from the systems already in use the one best adapted to the purpose of sound ranging or developing new and improved systems. The problem at the outset resolved itself into four general subdivisions: First, subterranean ranging; second, surface ranging; third, aerial ranging; fourth, flash ranging. The problem was then considered in the following manner: First, to ascertain the status of the problem; namely, what apparatus, if any, was available; second, from whom it could be obtained; third, if apparatus available was satisfactorily meeting field requirements; fourth, what was being done by the allies in the way of investigation, research, and development.

Investigation showed that the problem was so entirely new that little apparatus of a very imperfect character was in use by the allies, and none at that time available for the American Army. Enumerated below will be found a brief description of the four subdivisions above mentioned:

*Subterranean ranging.*—At the Bureau of Standards, Washington, D. C., there was established a group of physicists composed of specially selected men from the Bureau of Standards and officers from the United States Army. The first piece of apparatus developed was the geophone, an individually operated mechanical piece of apparatus, which is used for listening underground in detecting various mining activities on the part of the enemy. The latest types of geophones were secured from the French, as well as some apparatus captured from the Germans. After a careful study of its various functions it was concluded that there was need, and it was thought possible, to construct a more efficient piece of apparatus, and in consequence of greater military value. This was accomplished, and after the preparation of plans and specifications, the apparatus was produced in sufficient quantities to meet the requirements of special troops requiring its use. The geophone in its perfected form was sufficiently long-ranged and selective in detecting certain mining operations that mining and countermining at the front practically ceased. In using the geophone it was necessary for the operator to place himself at the instrument. Operating under these conditions men were greatly exposed, and many lost their lives. After completing the geophone the efforts of this group was utilized in perfecting what is known as the light microphone set, which enabled the operator to check any activity on the part of the enemy at six or less exposed positions, the observations being taken from a protected position sufficiently removed from the front line trenches. This apparatus is an electromechanical device, in which it is not necessary for the operator to be in close proximity with the detecting instrument. Plans and specifications for this apparatus were prepared for instruments to be put in production and delivery made. A part of the above group is now engaged in studying the characteristics of sound waves through the earth, the object being to design an apparatus to record the earth shock from a distant enemy gun, with a view to the possible utilization of this earth disturbance in giving warning to personnel of the approach of an enemy shell.

Up to the present writing actual records, although not yet characteristic, have been obtained of guns of relatively small caliber at a distance of 4.1 miles.

*Surface ranging.*—At the conference with the French Scientific Commission the surface sound ranging problem was discussed in its general aspects, and an agreement was reached whereby a detail of United States Army officers and enlisted personnel established at Princeton University would take up the investigation of the Dufour and Bull systems, and at the Bureau of Standards make a study of the Cotton-Weiss and the T.-M. system. A modified Dufour system was constructed at Princeton and shipped to France. The Cotton-Weiss system was quickly abandoned, and the attention of the detail at the Bureau of Standards was centered on the development of that known as the T.-M. Some six complete sets of the T.-M. apparatus were developed and shipped to France, one set being sent to the Italian Government. Two modified Dufour systems were sent to France from Princeton. Upon securing report of these two systems and recommendation from our officers at the front we were instructed to build the remaining apparatus for immediate demands of the Bull type. This was correspondingly done, and at the close of the war there were in operation along the American front some 12 complete sections, each outfit covering a front of approximately 5 miles. We might say in explanation that the surface sound ranging sets are used for the purpose of locating, by means of sound through the air, the location of an enemy's individual gun or battery. We are advised that this apparatus has been of great value. Some six weeks ago there was sent to France a new model of the surface sound ranging set, known as the light T.-M. It was thought that had the war continued, on account of its mobility as compared to the Bull system, it would have been found very valuable.

*Aerial ranging.*—A group consisting of civilian physicists, officers, and enlisted men from the Army, assisted by a United States Navy representative, was formed for this work. This subdivision is divided into two parts—one consisting of the use of parabola as preliminary finder for the use of searchlights in the detection of aeroplanes at night, the other in the use of long horns used for detecting and locating the enemy aeroplanes at night without the aid of searchlights, the information secured to be used in connection with antiaircraft firing. In the first case parabolas were developed and produced which, out of 12 points, 11 were favorable to those of American manufacture, some of the principal advantages being lightness, greater range, portability, and cheapness. The development of the antiaircraft problem in which long horns were used entailed long, tedious experiments, all of which have been practically completed, and the apparatus, which is of more or less complicated nature, has been under production for some 60 days. Delivery of the first apparatus is promised some time in January.

*Flash ranging.*—In this connection it was necessary to get out plans and specifications, the requirements of which were sent from overseas. On account of difficulty in securing optical glass for the observation telescopes at the time of placing order, the delivery was much delayed. The first delivery of these telescopes is promised in December. Pending delivery a limited number were secured from the French, which met our overseas requirements until delivery could be accomplished from the United States.

*Work to be accomplished in future.*—To complete the problem of long-horn and plotting-board investigation in aerial ranging, and to make such improvements as may be possible in all apparatuses.

*Laboratories.*—The facilities offered by the Bureau of Standards, Washington, D. C., have been utilized in one case, and several large experimental laboratories of Princeton, N. J., have been used in another case, in sound ranging development work. Field experimental stations were established at Winthrop, Md., the buildings utilized being loaned to us by the United States Navy. Another field experimental station was established at Ellington Field, Tex. While the facilities mentioned, all belonging to other departments, were utilized during the war, it is thought that the War Department should have laboratories of its own. Accordingly the estimates submitted for sound ranging development work includes the cost of two small laboratories.

(Two photographs on file with the clerk of the committee.)

#### SEARCHLIGHT DEVELOPMENT WORK.

1. *Work accomplished.*—Active searchlight investigation work was started December 1, 1917. Since that time 175 investigations have been made and 70 reports covering these investigations issued. The cooperation of 20 scientists, 46 manufacturers, and 5 Government bureaus has been obtained in carrying on many of the tests required.

One of the principal results of the tests and experiments has been the development

of a searchlight more powerful than any heretofore produced and yet weighing only one-eighth as much, costing only one-third as much, and taking only one-fourth the cubage of the best searchlight heretofore produced. In addition, there is partially completed a continuation of this development which will, without increasing the cost or weight, increase the power of the searchlight at least three times. As a result the range will be almost doubled and the illumination area more than quadrupled.

Investigations have also resulted in the development of very efficient light weight and mobile searchlight power units. The first of these weighs, complete with its crew, searchlight, and all other necessary equipment, 7,500 pounds. It uses a standard automobile engine and chassis and can be produced rapidly in large quantities. The first sample was placed in the field with the expeditionary forces in France four months after the order was placed. Production was under way at the time the armistice was signed, having been started when the sample was about two-thirds completed.

The development of the light-weight, low-priced searchlight and light-weight, low-priced power unit resulted in a saving in expenditure of over \$2,000,000, with a development expense of less than \$200,000, beside giving the Army superior equipment.

2. *Work to be accomplished.*—The funds requested are for the purpose of continuing the investigations started in 1917. It is hoped by means of these investigations to still further increase the finding power of the searchlights at least two fold, to more than double their range, and to effect greater economies in manufacture, with a resultant saving in first cost. Besides, by the development of relative inexpensive auxiliaries, the searchlights will, it is hoped, be very much more efficiently operated and give a more beneficial performance.

3. *Apparatus* (item on p.—, amount \$20,000).—Practically all of the apparatus specified in the estimate is standard apparatus. Some of it is new apparatus, which will require a little development work. Such development work and any modifications to standard apparatus will be done by the manufacturers of the apparatus, since it is believed this is the most economical manner in which to have the work done.

Practically none of the apparatus specified is on hand nor is it readily obtainable. It is for these reasons that request is made for funds to cover its purchase. The apparatus listed is a minimum and the elimination of any portion of it is quite likely to cripple the proposed investigations.

4. *Tests.*—In connection with searchlight investigations it is essential that the performance of the various searchlights be determined. This is essential in order that the characteristics of the searchlights may be determined and their performance compared.

No one particular test is sufficient to determine the performance of a searchlight. It is necessary to determine the amount of light it gives, the distribution of the energy in the light emitted, and the ease or difficulty with which this light can be used in finding targets. These tests are made by photometric, spectro photometric, and thermal tests. In addition it is essential to know the electrical and mechanical characteristics of the searchlights and their performance when subjected to operation on the road. In addition some chemical tests are necessary in connection with the carbons, insulation, and other details of construction.

5. *Summary.*—The searchlight investigations to date have cost about \$200,000. They have effected a saving of more than ten times their cost. If continued, they will doubtless effect a similar saving, beside at the same time markedly increasing the efficiency and utility of the device.

(Three photographs on file with the clerk of the committee.)

#### PONTOON AND BRIDGE DEVELOPMENT.

##### WORK ACCOMPLISHED.

1. When war with Germany was declared the United States had developed heavy pontoon equipment, which had been tested and retested numerous times, but which had remained almost constant in design, notwithstanding, since the Civil War. Large orders were placed at once for this equipment and by the latter part of 1917 quantities were available for shipment overseas. It was not, however, until the fall of 1918 that sufficient tonnage was available in order to transport this equipment to France. In the meantime the heavy loads of modern armies had been considered, and developments had been made with a view to utilizing the standard and long tried-out equipment to carry tanks and modern heavy artillery.

2. *Intermediate type of pontoon bridge.*—As a first step in this direction a bridge was developed using standard material, to which were added a few simple collars and wedges, capable of carrying loads of 5 tons on each of two axles spaced 10 feet or more

apart, as against loads of about 3 tons, similarly spaced, which the old-type bridge was capable of carrying.

3. *Heavy type of pontoon bridge.*—This type of bridge was developed to carry normal axle loads of 10 tons at a distance of 12 feet or more between axles, but the bridge was actually capable of carrying a load of 15 tons concentrated on one axle, in case of necessity. On this bridge material from standard pontoon equipment was used as far as possible, and in addition heavy side rails with underslung beams in the floating spans were also employed. Since pontoon material was being shipped to France as rapidly as tonnage became available, it was only necessary to mail the plans of the intermediate and heavy type bridges to the American Expeditionary Force, where the few additional timber and metal parts necessary could be provided. When the armistice was signed a raft was under design which would be capable of transporting the heaviest portable ordnance then under manufacture in the United States. As none of this ordnance had been shipped to France, it was expected that the plans for the raft, which employed standard pontoon equipment, would have been ready as soon as there were calls for its use.

4. *Portable steel bridges.*—During the fall of 1917 designs for portable steel bridges to carry loads of 19 tons were worked up in this country. In the American Expeditionary Force, however, similar studies were being made, which, from close observation of French and British practice, indicated that portable steel bridges able to carry loads of 30 tons should be provided. Designs for such bridges were therefore prepared and sent to the United States, where they were put into production. Large quantities of these bridges were ready for shipment to France at the time the armistice was signed.

5. *Pontoon footbridges.*—The experience of our forces during the spring and summer of 1918 indicated that a portable floating footbridge would be very valuable. Such a bridge was designed by an officer of the Engineer Department in France and put into production. Reports recently received indicate that many of the crossings of the Meuse River and nearby canals under machine gun and artillery fire from the high hills on the eastern side were made possible largely by these bridges. Below is shown one of the bridges across the Canal de L'Est near the village of Brioulles not far from Dun-sur-Meuse. After this bridge had been erected by Engineer troops the Infantry was unable to advance for 26 hours as a result of heavy and direct enemy fire.

6. *Future development of pontoon bridges.*—Plans are now being prepared for a pontoon bridge carrying normal axle loads of 15 tons. In this bridge but little of the standard pontoon equipage is used. The pontoons are only slightly changed to enable them to be nested for transportation. Other parts of the bridge are to be made heavier and stronger in order to carry the heavier loads.

Plans are being prepared for motorizing the pontoon train. It is expected to use an Artillery type tractor drawing trailers with much heavier loads than now used.

## GENERAL ENGINEER EQUIPMENT.

### WORK ACCOMPLISHED.

*Portable shops.*—Portable machine, blacksmith, carpenter, and store-room shops, in demountable bodies, mounted on 5½-ton motor trucks, were developed very early in the war for general field service in advance of the base shops. These portable shops were completed and ready for shipment very early in the war, and were found of the utmost value in actual service. They were so constructed that they could be entirely closed up, the sides and ends of the inclosing structure being lowered in operation to form convenient work tables when used on the truck bodies, or to form an extension of the shop floor when demounted. With this arrangement a complete, well-equipped shop with storeroom of supplies, and able to handle a wide range of general repair and construction work, could be assembled at any desired point on very short notice, the individual units going to the desired place under their own power. In cases where the shop was set up for a period of several days or weeks, bodies could be demounted and the trucks used for the purpose of transporting work to and from the shops, or to meet other needs of transportation, until such time as the shop was again moved.

Another very successful development of this nature was the portable photolithographic press truck. This was developed very early in the war, and was of immense service at the front. Lithographic sketches and maps were prepared and distributed from the original sketches in 12 hours, whereas the best British and French outfits, which were much less portable, were unable to do the same work in less than four days. The American outfits established an enviable record of achievement in this class of work.



*Demolition equipment and supplies.*—Marked improvements were made both in explosives and in the equipment for their use. An officer was detailed for careful comparative tests at the laboratories of the Bureau of Mines. By a study of commercial explosives it was found that three-fourths of the T.N.T. used in mining and demolition work could be replaced by a cheaper explosive having very much better properties for heavy charges, thus limiting the use of T.N.T. to distributed charges. This substitution of an explosive which was more easily obtained was of particular importance because of the shortage of T.N.T. It was further discovered as a result of these tests that a more common and far cheaper explosive could be substituted for T.N.T. in distributed charges, giving materially better results. The devices commercially used in electrical detonation are crude and inefficient. Very much more powerful and efficient devices were developed for this work, thus largely eliminating the uncertainties which have heretofore existed in the firing of a large number of distributed charges by electrical means.

*Trucks and truck bodies.*—Special trucks and truck bodies were developed for a wide range of Engineer services. Some of these have already been indicated under the heading of portable shops. The variety and scope of the work is illustrated by the following list of special-service trucks:

Portable machine shops.

Sterilizers, tanks, etc., for water supply.

Special transport bodies (combination transport, stake, and platform trucks).

Photolithographic press trucks.

Job press trucks.

Photographic laboratory trucks.

Derrick, wrecking, and capstan trucks.

Road sprinklers and oilers.

Special dump bodies for highway work.

*Tool wagon.*—The extremely rough and shell-torn nature of the ground in the front areas made the usual form of tool wagon unserviceable. A limber and caisson tool wagon, capable of going over the roughest terrain, and designed to be uncoupled and operated, where necessary, as two 2-wheeled carts, was designed very early in the war, and a large number were constructed and supplied for the standard equipment of Engineer troops.

*Portable pile driver.*—A light, portable pile driver, unlike anything used in commercial work, was developed and constructed for temporary bridge work.

*Small tools and implements.*—A variety of special designs of small tools and implements for Engineer use were perfected, where the standard commercial articles did not meet military needs, or in cases where there were no commercial articles for the service.

(Five photographs on file with the clerk of the committee.)

#### ENGINEER EQUIPMENT OF TROOPS, 1919.

(See p. 781 for details.)

1. Appropriated:		
Act July 9, 1918.....	\$135,000,000.00	
Collections account losses, etc.....		36.55
		<hr/>
		135,000,036.55
2. Disbursements to Dec. 6.....		1,265,305.97
		<hr/>
3. Balance unexpended.....		133,734,730.58
4. Unpaid obligations chargeable to unexpended balance:		
(a) To Dec. 6, 1918, on orders placed by General Engineer Depot and Director of Purchases.....	\$4,864,799.30	
(b) All other purchasing officers, to Oct. 31....	2,850.13	
		<hr/>
		4,867,649.43
		<hr/>
5. Unobligated or free balances.....		128,867,081.15
6. Estimated savings on outstanding obligations:		
(a) Cancellation of orders placed by General Engineer Depot and Director of Purchases.....	750,000.00	
(b) Cancellation of orders placed by Director General Military Railways.....	452,000.00	
		<hr/>
		1,202,000.00

7. Estimated savings on unobligated (or free) balances shown in item 5, unobligated balance.....	\$128,867,081.15
Anticipated requirements during remainder of current fiscal year:	
(a) Development work, material and equipment:	
Pontoon and bridge.....	\$31,000
Searchlights.....	350,000
Sound ranging.....	12,000
Sapper and train equipment....	7,500
	<hr/>
	\$400,500.00
(b) Changing personnel on development work from military to civilian status.....	69,380.00
Maintenance of electrical equipment and searchlights and sound-ranging equipment.....	100,000.00
Fabrication and maintenance of pontoon and other Engineer equipment at depots throughout this country and the insular possessions....	50,000.00
Miscellaneous.....	75,000.00
	<hr/>
	694,880.00
Estimated savings on unobligated balances.....	128,172,201.15
Allow for deficit under "Engineer equipment of troops, 1918".....	2,841,234.99
	<hr/>
	125,330,966.16
Estimated savings on cancellations.....	1,202,000.00
Estimated savings on unobligated balances.....	125,330,966.16

EXPLANATORY DATA RELATIVE TO STATEMENT FOR ENGINEER EQUIPMENT OF TROOPS, 1919.

Item No. 1 (appropriated): No explanation necessary.

Item No. 2 (disbursements to Dec. 6): Made up as follows:

Disbursements by General Engineer Depot and Director of Finance (see Exhibit A, p. 782)..... \$1,261,200.84

This amount is arrived at by subtracting the unexpended balance of this appropriation, \$19,519,799.16, as shown in Lieutenant Buchler's memorandum of Dec. 6, 1918, from the total amount allotted to the General Engineer Depot, \$20,781,000.

Disbursements to Oct. 31 by all other depots to whom funds were allotted..... 4,105.13

(This amount is taken from reports of operations for October.

Details are shown on sheet herewith. Exhibit B, p. 782, in col. 1.) 1,265,305.97

Item No. 3: No explanation necessary.

Item No. 4 (unpaid obligations chargeable to unexpended balance):

Subitem (a) This item covers the outstanding obligations of the General Engineer Depot (Director of Finance), as furnished by Lieutenant Buchler in his memorandum of Dec. 6..... 4,864,799.30

(These obligations cover the following classes of material):

Construction machinery.....	\$43,643.52
Shop machinery.....	53,417.65
Railway track material and fastenings.....	1,140.00
Automotive transportation.....	64,415.23
Horse-drawn transportation and supplies.....	165,065.73
Lumber.....	81.05
Iron and steel and products thereof.....	284,829.58
Hardware.....	114,511.17
Hand tools.....	1,335,534.17
Liquids, chemicals, explosives, and accessories....	55,648.94
Engineer supplies.....	2,738,247.51
Office supplies.....	5,195.61
Miscellaneous.....	3,069.14

4,864,799.30

Subitem (b). All other purchasing officers (see Exhibit

B, p. 782, col. 2..... 2,850.13

4,867,649.43

Item No. 5: Difference between 4 and 3.

Item No. 6 (estimated savings on outstanding obligations):  
Subitem (a) This covers cancellation of orders by General Engineer Depot and Director of Purchases. The amount of these cancellations was furnished by Colonel Wheeler in inclosure accompanying his memorandum of Dec. 7, 1918, and covers cancellations of contracts for the following classes of material:

Wagon transportation.....	\$50,000. 00	
Unit equipment, hardware and tools.....	600,000. 00	
Surveying and drafting equipment.....	100,000. 00	
		\$750,000. 00

Subitem (b) This covers the estimated savings by cancellation as given by the Director General Military Railways in his memorandum dated Dec. 6, 1918, and covers cancellations on the following classes of materials:

Searchlight materials.....	410,000. 00	
Sound and flash ranging equipment.....	42,000. 00	
		452,000. 00

Item No. 7 (estimated savings on unobligated balances):  
Anticipated requirements during remainder of current fiscal year:  
Subitem (a). This estimate furnished by Board on Engineer Troops by its indorsement of December 5, 1918. (Exhibit C, p. 783.)  
Subitem (b). This estimate furnished by Board on Engineer Troops by its indorsement of December 6, 1918. (See Exhibit D, p. 785.)  
Subitem (c). This estimate shown in pencil change on memorandum of December 7, 1918, from the Director General Military Railways. (111.4 E. 58.)  
Subitem (d). This item covers the available balances on October 31 of allotments to all officers except the General Engineer Depot and the Director of Finance.  
Subitem (e). This item covers unforeseen requirements.  
Subitem (f). As stated, this item covers a deficiency under the appropriation "Engineer Equipment of Troops, 1918" which is shown in Lieut. Buchler's memorandum of December 6. This deficiency can properly be charged to the appropriation for the fiscal year 1919 in view of the legislation in the Army act of July 9, 1918, stating that appropriations in that act can properly be used for obligations incurred prior to June 30, 1918, where necessary.

EXHIBIT A.

WAR DEPARTMENT,

[Office of the Chief of Staff, Purchase, Storage, and Traffic Division, Office of the Director of Finance.]

Washington, December 12, 1918.

1. Construction machinery.....	\$4,141. 37	
3. Shop machinery.....	13,526. 78	
8. Automotive transportation.....	15. 75	
9. Horse-drawn transportation.....	83. 62	
12. Iron and steel products thereof.....	67,606. 99	
13. Hardware.....	61,498. 55	
14. Hand tools.....	289,562. 36	
15. Liquids, chemicals, explosives, and accessories.....	28,936. 84	
16. Engineer supplies.....	791,887. 28	
18. Office supplies.....	26. 87	
19. Office salaries and other supervisory expenses.....	2,838. 69	
20. Miscellaneous.....	1,075. 74	
		1,261,200. 84

EXHIBIT B.

Engineer equipment of troops, 1919.

Purpose.	Column 1— amount spent.	Column 2— amount obligated.	Column 3— amount available.
Operation of depots.....	\$1,264. 20	\$40. 75	\$11,195. 05
Equipment.....	658. 17	158. 80	16,983. 03
Miscellaneous.....	2,182. 76	2,650. 58	6,241. 66
	4,105. 13	2,850. 13	34,419. 74



## EXHIBIT C.

*Estimate of funds for development work to June 30, 1918.*

<b>Camouflage:</b>		
Paints, oils, and pigments.....	\$2, 500	
Screen material.....	2, 000	
Civilian labor.....	500	
		<b>\$5, 000</b>
<b>Pontoon and bridge equipment:</b>		
Lumber.....	10, 000	
Civilian labor.....	6, 000	
Steel work.....	2, 500	
Tractors and trailers.....	15, 000	
Total.....	33, 500	
Allotted to date.....	11, 500	
Additional funds required.....		<b>22, 000</b>
<b>Searchlights:</b>		
Arcs—		
Sperry, 300 amperes, medium intensity.....	2, 000	
Sperry, 500 amperes, high intensity.....	2, 000	
Halverson, 500 amperes, medium intensity.....	3, 000	
Halverson, 300 amperes, high intensity.....	3, 000	
Ryan, 500 amperes, high intensity.....	3, 000	
Murphy, 300 amperes, high intensity.....	2, 000	
Thomson intermittent.....	5, 000	
		<b>20, 000</b>
Mechanisms (lamps)—		
Halvorson, cartridge.....	10, 000	
Murphy, teakettle.....	10, 000	
Bassett, cart wheel.....	10, 000	
Josephs, Army.....	10, 000	
		<b>40, 000</b>
Carbons—		
General Electric, 500 amperes, high intensity.....	5, 000	
National, 500 amperes, high intensity.....	5, 000	
Speer, 500 amperes, high intensity.....	5, 000	
General Electric, 500 amperes, medium intensity.....	5, 000	
National, 500 amperes, medium intensity.....	5, 000	
Speer, 500 amperes, medium intensity.....	5, 000	
Tests.....	10, 000	
		<b>40, 000</b>
<b>Mirrors:</b>		
Dymalkon, nickel steel.....	10, 000	
Bart, nickel silver.....	5, 000	
Fodor, silver.....	5, 000	
Webster, silver.....	5, 000	
Halvorson, silver.....	10, 000	
Stiles, silver.....	5, 000	
Peck, stellite.....	10, 000	
		<b>50, 000</b>
<b>Carriages—</b>		
Army.....	1, 000	
General Electric.....	2, 000	
Sperry.....	2, 000	
		<b>5, 000</b>
<b>Frames—</b>		
Army.....	3, 000	
General Electric.....	3, 000	
Sperry.....	4, 000	
		<b>10, 000</b>

## Searchlights—Continued.

## Control—

Army.....	\$1, 000	
General Electric.....	3, 000	
Automatic switch.....	2, 000	
Westinghouse-Waterbury.....	3, 000	
Sperry.....	3, 000	
Cutler-Hammer.....	3, 000	
		<b>\$15, 000</b>

## Indicators:

General Electric.....	3, 000	
Telautograph.....	3, 000	
Westinghouse.....	3, 000	
Sperry.....	3, 000	
Carlisle-Finch.....	3, 000	
		<b>15, 000</b>

## Finders—

Peck.....	2, 000	
Akeley.....	1, 000	
Brashear.....	2, 000	
		<b>5, 000</b>

## Power—

General Electric.....	20, 000	
Westinghouse.....	10, 000	
Allis-Chalmers.....	10, 000	
American La France.....	10, 000	
		<b>50, 000</b>

## Tests—

Schenectady Station (Ryan).....	10, 000	
Lynn.....	5, 000	
Brooklyn.....	5, 000	
		<b>20, 000</b>

## New appliances—

Photometers.....	5, 000	
Instruments.....	5, 000	
Targets.....	5, 000	
Miscellaneous.....	10, 000	
		<b>25, 000</b>

Unitemized.....		<b>55, 000</b>
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Total.....		<b>350, 000</b>
Funds already allotted.....		<b>105, 000</b>

Balance additional funds required.....		<b>245, 000</b>
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## Sound ranging:

Construction work (to complete Bull-Tucker sets).....	5, 000	
Sound ranging for airplanes.....	1, 000	
Subterranean sound ranging.....	2, 000	
Sound ranging for gun position (T. M. sets).....	4, 000	
		<b>12, 000</b>

## Sapper and train equipment:

Development of company tool wagon.....	2, 500	
Study of map reproduction methods.....	3, 000	
Tools and miscellaneous items.....	2, 000	
		<b>7, 500</b>

H. S. HETRICK,  
Colonel of Engineers,  
Senior Member, Board on Engineer Troops.  
By J. B. CRESS,  
Lieut. Col. of Engineers.

EXHIBIT D.

Estimate of funds required for conducting present development work by civilians in place of officers and enlisted men.

CAMOUFLAGE.

Num- ber.	Classification.	Rate.	Amount.	Total.
1	Camoufleur.....	\$4,000 per year.....	\$2,000	\$2,900
2	Laborers.....	\$7.5 per month.....	900	

PONTOON AND BRIDGE EQUIPMENT.

1	Engineer.....	\$4,000 per year.....	\$2,000.00	\$8,000
3	Carpenters, 165 days.....	\$7.50 per day.....	3,712.50	
1	Blacksmith, 165 days.....	do.....	1,237.50	
2	Laborers, 150 days.....	\$3.50 per day.....	1,050.00	

NOTE.—A large body of men, 80 to 150, will be required for one or two hours from time to time in the building and loading of pontoon bridges. It is not believed feasible to do this by civilian labor.

SOUND RANGING.

2	Physicists.....	\$2,500 per year.....	\$2,500	\$11,780
3	Mechanicians, 60 days.....	\$10 per day.....	1,800	
3	Mechanics, 60 days.....	\$5 per day.....	1,180	
2	Mechanicians, 160 days.....	\$10 per day.....	3,200	
5	Helpers, 160 days.....	\$4 per day.....	3,200	

SEARCHLIGHTS.

1	Engineer in charge.....	\$5,000 per year.....	\$2,500	\$16,500
1	Assistant engineer.....	\$3,500 per year.....	1,750	
1	Patent engineer.....	\$4,000 per year.....	2,000	
3	Assistant engineers.....	\$3,000 per year.....	4,500	
1	Purchasing agent.....	\$3,500 per year.....	1,750	
1	Assistant purchasing agent.....	\$2,500 per year.....	1,250	
1	Director of tests.....	\$3,000 per year.....	1,500	
1	Assistant director of tests.....	\$2,500 per year.....	1,250	
4	Technical report writers.....	\$2.0 per month.....	4,800	
2	Photometrists.....	\$250 per month.....	3,000	
2	Electricians.....	\$150 per month.....	1,800	27,600
2	Gas engine experts.....	do.....	1,800	
4	Gas engine operators.....	\$120 per month.....	2,880	
4	Technical testers (electrical).....	\$150 per month.....	3,600	
1	Technical tester (mechanical).....	do.....	900	
1	Stenographer.....	\$120 per month.....	720	
1	Typist.....	\$100 per month.....	600	
2	Clerks.....	do.....	1,200	
2	Foremen, technical.....	\$200 per month.....	2,400	\$5,500
2	Storekeepers.....	\$100 per month.....	1,200	
6	Laborers.....	\$75 per month.....	2,700	

SAPPER AND TRAIN EQUIPMENT.

1	Mechanical designer.....	\$4,000 per year.....	\$2,000	\$5,500
1	Printing and engraving expert.....	\$3,000 per year.....	1,500	
1	Assistant to same.....	\$1,500 per year.....	750	
1	General contractor.....	\$2,500 per year.....	1,250	

Grand total, \$72,280.

H. S. HETRICK,  
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Senior Member of Board on Engineer Troops.  
By J. B. CRESS,  
Lieut. Col. of Engineers.

## ENGINEER EQUIPMENT OF TROOPS, 1918.

1. Appropriated:		
Act May 12, 1917.....	\$1,174,000.00	
Act June 15, 1917.....	35,876,000.00	
Act Oct. 6, 1918.....	12,100,000.00	
Collections.....	77.52	
		<hr/>
		\$49,150,077.52
2. Disbursements—in United States.....		48,826,285.54
		<hr/>
3. Balance.....		323,791.98
4. Unpaid obligations chargeable to balance shown in item 3:		
General Engineer Depot and director of purchases	\$3,157,675.30	
Other disbursing officers.....	6,851.67	
		<hr/>
		3,164,526.97
5. Unobligated (or free) balances.....		—2,840,734.99
6. Estimated savings on outstanding obligations.....		0
7. Estimated savings on unobligated (or free) balances:		
Unobligated balance.....		—2,840,734.99
Anticipated requirements.....		500.00
		<hr/>
Deficit (to be charged to 1919 funds) per act July 9, 1918.....		2,841,234.99
Summary:		
Estimated savings or cancellation.....		0
Estimated savings on unobligated balance.....		0

CIVILIAN ASSISTANTS TO ENGINEER OFFICERS.

ESTIMATE SUBMITTED FOR 1920..... \$100,000.00

LANGUAGE OF ESTIMATE.

The language of this estimate is as follows, it being the same as the language of th appropriation for the fiscal year 1919 and prior years:  
For services of surveyors, survey parties, draftsmen, photographers, master laborers, and clerks to Engineer officers on the staffs of division, corps, and department commanders.

PURPOSE OF APPROPRIATIONS.

As indicated in the language quoted above, this appropriation is applicable to the payment of salaries only of civilian assistants to Engineer officers on the staffs of division, corps, and department commanders. In actual practice it has been used almost entirely for salaries of civilian assistants to department Engineers, and the estimate submitted for 1920 includes only the estimated amount required for that purpose. This is a peace time appropriation, and the need for it is not affected by the end of the war. The civilian employees in Europe and in this country whose services were necessitated on account of the war were not paid from this appropriation, but from the appropriation for "Engineer operations in the field."

BASIS OF 1920 ESTIMATE.

The 1920 estimates are based upon estimates received from department Engineers, as follows:

Northeastern Department.....	\$6,400.00
Eastern Department.....	22,000.00
Southeastern Department.....	3,500.00
Central Department.....	11,650.00
Southern Department.....	20,000.00
Western Department.....	11,060.00
Panama Canal Department.....	13,500.00
Hawaiian Department.....	3,900.00
Philippine Department.....	5,800.00
Emergency employees.....	2,190.00
	100,000.00

These estimates are based upon providing for permanent civilian forces of the department Engineer and do not provide for the large number of draftsmen, etc., employed on military mapping, these employees being paid from the appropriation for "Military surveys and maps." Details of the above estimates are shown on pages 788 and 789.

ESTIMATES AND APPROPRIATIONS FOR LAST FIVE YEARS.

The estimates and appropriations for this purpose for the last five years have been as follows:

Fiscal year.	Estimate.	Appropriation.
1915.....	\$40,000.00	\$40,000.00
1916.....	40,000.00	40,000.00
1916-1917.....	10,000.00	10,000.00
1917.....	75,000.00	75,000.00
1918.....	75,000.00	75,000.00
1919.....	115,000.00	90,000.00
1920.....	100,000.00	.....

## REASON FOR INCREASE.

The estimate for 1920 has increased because of the estimates received from department Engineers and because of the fact that the Army contemplated for the fiscal year 1920 is larger than the army heretofore maintained during peace times will increase the activities of the department Engineers to a considerable extent.

*Expenditures, 1918, and total amounts expended and obligated to Dec. 1, appropriations.*

	Expenditures, 1918.	Total expended and obligated, 1919, up to Dec. 1.
Department Engineers, Northeastern Department.....	\$7,600.00	\$2,671.15
Department Engineers, Eastern Department.....	14,994.61	8,294.73
Department Engineers, Southeastern Department.....	3,875.00	1,063.00
Department Engineers, Central Department.....	6,000.00	2,324.64
Department Engineers, Southern Department.....	13,116.66	6,246.28
Department Engineers, Western Department.....	7,310.82	3,142.83
Department Engineers, Panama Department.....	8,000.00	3,163.17
Department Engineers, Hawaiian Department.....	2,000.00	666.65
Department Engineers, Philippine Islands.....	8,620.00	2,000.00
	71,517.09	29,572.45

This estimate is based on data sheets received from department Engineers and includes only the amount which is apparently for the permanent office force. It does not include the large number of draftsmen, etc., who have been employed on military mapping. These employees are paid from the appropriation for "Military surveys and maps." The following are the amounts making up the above estimate:

## Department engineer, Northeastern Department:

1 chief clerk.....	\$2,100.00	
1 voucher clerk.....	1,200.00	
1 correspondence clerk.....	1,200.00	
1 clerk stenographer.....	1,000.00	
1 messenger.....	900.00	
		\$6,400.00

## Department engineer, Eastern Department:

1 chief clerk.....	2,000.00	
1 clerk (assistant and property).....	1,400.00	
1 stenographer and typewriter.....	1,200.00	
1 record and file clerk.....	1,000.00	
3 miscellaneous clerks, at \$1,120 per annum.....	3,360.00	
1 messenger.....	720.00	
1 messenger.....	600.00	
1 head draftsman.....	1,600.00	
1 draftsman.....	1,500.00	
1 draftsman.....	1,440.00	
1 draftsman (copyist).....	1,399.99	
1 inspector.....	1,600.00	
Emergency employees.....	4,180.01	
		22,000.00

## Department engineer, Southeastern Department:

1 chief clerk.....	2,000.00	
1 clerk.....	1,500.00	
		3,500.00

## Department engineer, Central department:

1 chief clerk.....	1,650.00	
1 clerk.....	1,500.00	
1 clerk.....	1,200.00	
1 map clerk.....	1,200.00	
1 messenger.....	900.00	
2 junior civil engineers, at \$1,800.....	3,600.00	
1 topographic draftsman.....	1,600.00	
		11,650.00

## Department engineer, Southern Department:

1 chief clerk.....	\$2, 100. 00	
1 clerk.....	1, 320. 00	
1 clerk.....	1, 080. 00	
1 clerk.....	1, 080. 00	
1 surveyor.....	1, 860. 00	
1 draftsman.....	1, 500. 00	
1 copyist draftsman.....	1, 399. 92	
1 inspector.....	1, 470. 00	
1 skilled laborer.....	1, 080. 00	
1 electrician.....	900. 00	
1 clerk.....	900. 00	
Emergency employees.....	5, 310. 08	
		<hr/> \$20, 000. 00

## Department engineer, Western department:

1 junior engineer.....	2, 400. 00	
1 clerk draftsman.....	1, 620. 00	
1 draftsman.....	1, 620. 00	
1 draftsman.....	1, 320. 00	
1 minor draftsman.....	1, 320. 00	
1 clerk (part time).....	200. 00	
1 clerk.....	1, 380. 00	
1 clerk.....	1, 200. 00	
		<hr/> 11, 060. 00

## Department engineer, Panama Canal Department:

1 chief draftsman.....	2, 100. 00	
1 topographic draftsman.....	1, 800. 00	
1 topographic draftsman.....	1, 650. 00	
1 surveyor.....	1, 800. 00	
1 chief clerk.....	2, 250. 00	
1 clerk.....	1, 650. 00	
1 clerk (three-fourths time).....	1, 125. 00	
1 messenger.....	720. 00	
Emergency employees.....	405. 00	
		<hr/> 13, 500. 00

## Department engineer, Hawaiian Department:

1 junior engineer.....	2, 100. 00	
1 clerk.....	1, 800. 00	
		<hr/> 3, 900. 00

## Department engineer, Philippine Department:

1 chief clerk (American).....	1, 800. 00	
1 native draftsman.....	720. 00	
1 native draftsman.....	660. 00	
1 native draftsman.....	600. 00	
1 native draftsman.....	540. 00	
2 laborers, at \$420.....	840. 00	
1 laborer.....	300. 00	
1 laborer.....	240. 00	
Additional pay for native draftsmen while serving in the field.....	100. 00	
		<hr/> 5, 800. 00

97, 810. 00

Emergency employees..... 2, 190. 00

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100, 000. 00

## ENGINEER OPERATIONS IN THE FIELD.

ESTIMATE SUBMITTED..... \$30, 350, 000

### LANGUAGE OF ESTIMATE.

Same as 1919 appropriation.

### BASIS OF ESTIMATE.

<b>A. Material for Engineer training:</b>	
1. 24 Infantry divisions (20 combat and 4 base), at \$31,000.....	\$744, 000
This is required for allotment to the officer in charge of Engineer training of each division to cover the cost of local purchases of material for training Engineer and line troops in Engineer field operations. The material which is purchased will depend upon the circumstances connected with the training of each division, and in no two cases will the same kinds and quantities of material be required. The attached sheet (Exhibit A, see p. 791) gives a sample of the kinds and quantities of material which <i>may</i> be used for training of one division. This should not be considered as an estimate of the requirements of any particular division, but only as a sample of the <i>general</i> character of material used for Engineer training of divisional troops.	
2. Corps troops for 5 Army corps, at \$15,000.....	75, 000
This is required for allotment to the officer in charge of Engineer training of each corps to cover cost of local purchases of material for training in Engineer field operations. The material which is purchased will depend upon circumstances in each case, and in no two cases will the same kinds or quantities of material be required. The attached sheet (see p. 792) gives a sample of the kinds of material which <i>may</i> be used for training of one set of corps troops.	
3. Army troops, expendable material.....	227, 000
This is required for allotment to the officer in charge of Engineer training to cover the cost of local purchases of material for training in Engineer field operations. The material which is purchased will depend upon circumstances in each case, and in no two cases will the same kinds and quantities of material be required. The attached sheets (Exhibit C, see p. 792) shows the general character of the material which <i>may</i> be used for training of Army troops.	
4. Special tools, plant, and machinery for special Engineer organizations (see Exhibit D, p. 793).....	602, 400
5. Trade schools (see p. 794).....	132, 200
This estimate is made upon the basis of using the funds for trade schools at Camp Humphreys (see Exhibit E, p. 795) and Washington Barracks (see Exhibit F, p. 797), but it may be necessary to utilize the funds for trade schools elsewhere.	
6. Infantry School of Arms, Columbus, Ga. (see Exhibit G, p. 798), based on training 4,000 men.....	30, 000
7. Field Artillery Firing Centers and School of Fire, Fort Sill (see Exhibit H, p. 800).....	30, 000
B. Investigations, development work, etc., camouflage development (see Exhibit I, p. 800).....	10, 000
(Other development work, such as ranging, searchlight, pontoon bridge, and general Engineer investigations, carried on under "Engineer equipment of troops.")	
C. Central map-reproduction plant (see Exhibit K, p. 800).....	81, 895
D. Relief maps (see Exhibit L, p. 801).....	26, 840
E. Central photographic laboratory (see Exhibit M, p. 802).....	55, 950
F. Printing office (see Exhibit N, p. 802).....	59, 115



## G. For expenditure in American Expeditionary Force:

(a) For the disposition (handling, freighting, storage, etc.) of approximately 200,000 tons of Engineer material, at \$50 per ton.....	\$10,000,000
(b) For the restoration of leased properties to their original state as required in the various contracts executed by the Engineer Department.....	15,000,000
(c) For the operation and maintenance of a general Engineer office.....	3,000,000
	<hr/> \$28,000,000

## H. Salaries and expenses, Technical Engineer, Design, and Procurement

Division (see Exhibit O, p. 804)..... 70,000

I. Contingencies..... 205,600

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30,350,000

In case of general military training sums for training will have to be increased.

For status of 1919 funds, see page 805.

For status of 1918 funds, see page 822.

## EXHIBIT A.

*Statement showing general character of material used for Engineer training of divisional troops.*

## Demolitions:

1,200 pounds T. N. T., at 40 cents.....	\$480.00
1,200 pounds dynamite, at 23 cents.....	276.00
1,200 caps nonelectric, at 4 cents.....	48.00
1,200 electric, at 6 cents.....	72.00
6,000 feet fuze Bickford, at 2 cents.....	120.00
6,000 feet instantaneous, at 4 cents.....	240.00
Incidental supplies.....	300.00
	<hr/> \$1,536.00

## Wire:

30,000 pounds barb, No. 10, at 5 cents.....	1,500.00
1,200 pounds galvanized, No. 16, at 3 cents.....	36.00
1,200 pounds galvanized, No. 10, at 4 cents.....	48.00
6,000 pounds chicken, at 10 cents.....	600.00
	<hr/> 2,184.00

## Lumber:

8,400 feet, 2 by 8 inches by 14 feet, at \$60 per C.....	5,040.00
8,400 feet, 2 by 10 inches by 14 feet, at \$72 per C.....	6,048.00
8,400 feet, 4 by 4 inches by 14 feet, at \$60 per C.....	5,040.00
3,000 feet, 4 by 6 inches by 14 feet, at \$60 per C.....	1,800.00
1,800 feet, 6 by 6 inches by 14 feet, at \$72 per C.....	1,296.00
	<hr/> 19,224.00

Sandbags, with binders, 12,000, at 20 cents..... 2,400.00

Cement, 60 barrels, approximately 24,000 pounds..... 237.00

Gravel, 60 tons..... 90.00

## Screw posts:

300 long wire entanglement, at 50 cents.....	\$150.00
300 anchor wire entanglement, at 20 cents.....	60.00
	<hr/> 210.00

## Elephant shelters:

6, 5 feet 6 inches by 6 feet 3 inches by 17 feet 9 inches.....	768.00
6, 5 feet 3 inches by 4 feet 6 inches by 12 feet 9 inches.....	210.00
	<hr/> 978.00

Rails, 24 gross tons, approximately 1,800 feet track..... 1,392.00

Ties, 1,200 D. G. M. R., at 65 cents..... 780.00

## Rope, manila:

3,000 feet, 1-inch diameter, 250-foot coils, at \$23.50 per coil.....	282.00
3,000 feet, $\frac{1}{2}$ -inch diameter, 250-foot coils, at \$14.20 per coil.....	170.40
2,400 feet, $\frac{1}{2}$ -inch diameter, 200-foot coils, at \$11.40 per coil.....	136.80
3,000 feet, $\frac{1}{2}$ -inch diameter, 50-foot lashings, at 28 cents per 50 feet.....	16.80
4,320 feet, $\frac{1}{2}$ -inch diameter, 18-foot lashings, at 47 cents per 18 feet.....	112.80
	<hr/> 718.80

## Nails:

60 pounds 4-penny wire box, at 3½ cents.....	\$2. 10	
60 pounds 8-penny wire box, at 3½ cents.....	2. 10	
60 pounds 10-penny wire box, at 3½ cents.....	2. 10	
60 pounds 16-penny wire spike, at 4 cents.....	2. 40	
60 pounds 20-penny wire spike, at 4 cents.....	2. 40	
60 pounds 30-penny wire spike, at 4 cents.....	2. 40	
60 pounds 40-penny wire spike, at 4 cents.....	2. 40	
60 pounds 60-penny wire spike, at 4 cents.....	2. 40	
		\$18. 20
Incidentals.....		1. 23
Total.....		31. 00

## EXHIBIT B.

*Item 2. Corps troops for five Army corps, \$75,000—Material for 1 set of corps troops.*

¼ mile 60 c. m. track, fabricated.....	\$3, 600	
5 turnouts, at \$200 each.....	1, 000	
5 tons ballast.....	35	
		\$4, 635
Lumber:		
2 by 8 inches by 14 feet, 1,000 feet.....	600	
2 by 10 inches by 14 feet, 1,000 feet.....	720	
4 by 4 inches by 14 feet, 1,000 feet.....	600	
6 by 6 inches by 14 feet, 500 feet.....	360	
		2, 280
Sandbags, 2,000, at 20 cents.....		40
Cement, 10 barrels, approximately 4,000 pounds.....		40
Gravel, 10 tons.....		10
Elephant shelters:		
5 feet 6 inches by 6 feet 3 inches by 17 feet 9 inches, 1 each.....	125	
5 feet 3 inches by 4 feet 6 inches by 12 feet 9 inches, 1 each.....	35	
		160
Rails, 4 tons gross.....	235	
Ties, D. G. M. R., 200, at 65 cents each.....	130	
		365
Fabricated iron for section steel bridges.....	3, 500	
Miscellaneous.....	3, 602	
		7, 102
Total for 1 set of corps troops.....		15, 000
Total for 5 sets of corps troops.....		75, 000

## EXHIBIT C.

*Statement showing general character of material used for Engineer training of Army troops.*

## (a) Surveying and printing battalion:

Drawing paper.....	\$3, 000	
Drawing paper, double thickness.....	1, 000	
Pencils, ink, erasers, etc.....	1, 000	
Blue print paper.....	4, 000	
Field note book.....	1, 000	
Tracing cloth.....	3, 000	
Printing paper.....	7, 500	
Ink:		
Printing.....	5, 000	
Lithographing.....		
Paints and chemicals.....	5, 000	
Photographic reproduction.....	3, 000	
Signal cloth and muslin.....	1, 000	
Lumber.....	500	
Incidentals.....	5, 000	
		\$40, 000

## (b) Electrical and mechanical regiment:

Copper wire.....	\$5, 000	
Lamps and incidentals.....	3, 000	
Oils and gasoline.....	1, 000	
Pipe and fittings.....	2, 500	
Sapper training.....	1, 500	
Lumber.....	1, 000	
Miscellaneous.....	2, 000	
		<hr/> \$16, 000

## (c) Light railway regiment:

3 miles 60 c. m. track fabricated.....	22, 000	
30 turnouts, at \$200.....	6, 000	
40 tons ballast.....	300	
Miscellaneous supplies.....	1, 700	
		<hr/>

Total for 1 regiment..... 30, 000

Amount for 2 regiments..... 60, 000

## (d) Roads regiment:

Cement.....	10, 000	
Lumber.....	5, 000	
Sand and gravel.....	3, 000	
Miscellaneous iron.....	2, 000	
Miscellaneous supplies.....	10, 000	
		<hr/>

Total for 1 regiment..... 30, 000

Amount for 3 regiments..... 90, 000

## (e) Camouflage battalion:

Lumber.....	1, 000	
Cloth and muslin.....	500	
Nails.....	100	
Paints and chemicals.....	3, 000	
Miscellaneous.....	400	
		<hr/>

5, 000

## (f) Sound and sight ranging battalion:

Sensitized paper and special paper tape.....	500	
Developer (photographic).....	150	
Carbide.....	25	
Electrolite.....	25	
Lubricating oils.....	50	
Gasoline.....	100	
Miscellaneous.....	150	
		<hr/>

1, 000

## (g) Searchlight regiment:

Gasoline, oil, and grease.....	13, 500	
Carbons and miscellaneous supplies.....	1, 000	
Engineer training not searchlight.....	500	
		<hr/>

15, 000

Total..... 227, 000

## EXHIBIT D.

## ITEM 4.

Special tools, plant, and machinery for special Engineer organizations..... \$602, 400

This estimate is intended to provide funds for the purchase of sufficient special tools, plant, and machinery for use for training purposes for the special Engineer organizations indicated below. The amounts given below represent approximately 20 per cent of the cost of special tools, plant, and machinery which were furnished to similar organizations in this country for use overseas:

1 surveying and printing battalion.....	\$78, 000	
1 electrical and mechanical regiment.....	30, 000	
2 light railway regiments.....	24, 000	
3 roads regiments, including 6 wagon companies.....	374, 400	
1 camouflage battalion.....	96, 000	
		<hr/>

Total..... 602, 400

*Trade schools—Based on training 8,200 men during year.***SALARIES.**

Clerk.....	\$1,200
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**EQUIPMENT AND SUPPLIES.**

<b>Blacksmith school:</b>	
Horseshoes.....	\$3,700
Tools.....	900
Steel and iron.....	3,600
Coal.....	800
	\$9,000
<b>Carpenter school:</b>	
Lumber.....	9,700
Hardware of all kinds.....	3,200
	12,900
<b>Drafting school:</b>	
Paper.....	2,100
Ink.....	1,100
Instruments.....	300
	3,500
<b>Electrical school:</b>	
Wire.....	3,700
Tools.....	900
Supplies.....	1,500
	6,100
<b>Survey school:</b>	
Paper.....	1,500
Office supplies.....	1,000
	2,500
<b>Gas engine school:</b>	
Gas.....	3,700
Oil.....	1,050
Parts.....	1,800
Tools.....	300
Miscellaneous.....	750
	7,600
<b>Lithographic school:</b>	
Paper.....	4,200
Ink.....	1,050
Chemicals.....	2,100
Plates.....	1,050
	8,400
<b>Masonry school:</b>	
Brick.....	3,200
Cement.....	6,400
Sands.....	2,400
Gravel.....	2,700
Steel.....	900
	15,600
<b>Machine shop:</b>	
Castings.....	3,700
Steel.....	2,100
Iron.....	1,800
Brass.....	1,600
Tools.....	600
	9,800
<b>Welding school:</b>	
Oxygen.....	14,000
Carbide.....	9,800
Welding stock, iron, brass, steel, and aluminum.....	3,200
	27,000
<b>Plumbing school:</b>	
Pipe.....	2,100
Fittings.....	1,080
Lead.....	800
Solder.....	220
	4,200

Photographic school:		
Films.....	\$2, 400	
Plates.....	900	
Chemicals.....	1, 600	
Paper.....	3, 200	
	<hr/>	\$8, 100
Rigging school:		
Rope.....	2, 100	
Spars.....	900	
Sheaves.....	800	
	<hr/>	3, 800
Stenographic school:		
Paper.....	2, 100	
Office supplies.....	1, 100	
	<hr/>	3, 200
Survey school:		
Paper.....	600	
Office supplies.....	600	
	<hr/>	1, 200
Miscellaneous expenses.....		5, 100
Proportion of administration and power house (Exhibit O), chargeable to trade schools.....		3, 000
		<hr/>
		131, 000
Total.....		<hr/>
		132, 200

## EXHIBIT E.

*Commodity estimate for the training of 5,000 men at Camp A. A. Humphreys, Va.—  
Trade schools.*

Blacksmith school:		
Horseshoes.....	\$2, 500	
Tools.....	600	
Steel and iron.....	2, 400	
Core.....	500	
	<hr/>	6, 000
Carpenter school:		
Lumber.....	3, 700	
Hardware of all kinds.....	2, 000	
	<hr/>	5, 700
Drafting school:		
Paper.....	1, 500	
Ink.....	800	
	<hr/>	2, 300
Electrical school:		
Wire.....	2, 500	
Tools.....	600	
Supplies.....	1, 200	
	<hr/>	4, 300
Survey school:		
Paper.....	1, 500	
Office supplies.....	1, 000	
	<hr/>	2, 500
Gas engine school:		
Gas.....	2, 500	
Oil.....	750	
Parts.....	1, 200	
Miscellaneous.....	750	
	<hr/>	5, 200

## Lithographic school:

Paper.....	\$3, 000
Ink.....	750
Chemicals.....	1, 500
Plates.....	750
	<hr/>
	6, 000

## Masonry school:

Brick.....	2, 000
Cement.....	4, 000
Sands.....	1, 500
Gravel.....	1, 500
Steel.....	600
	<hr/>
	9, 600

## Machine shop:

Castings.....	2, 500
Steel.....	1, 500
Iron.....	1, 200
Brass.....	1, 000
	<hr/>
	6, 200

## Welding school:

Oxygen.....	8, 000
Carbide.....	5, 000
Welding stock, iron, brass, steel, and aluminum.....	2, 000
	<hr/>
	15, 000

## Plumbing school:

Pipe.....	1, 200
Fittings.....	600
Lead.....	500
Solder.....	100
	<hr/>
	2, 400

## Photographic school:

Films.....	1, 500
Plates.....	600
Chemicals.....	1, 000
Paper.....	2, 000
	<hr/>
	5, 100

## Rigging school:

Rope.....	1, 500
Spars.....	600
Sheaves.....	500
	<hr/>
	2, 600

## Stenographic school:

Paper.....	1, 500
Office supplies.....	500
	<hr/>
	2, 000

## Miscellaneous expenses.....

5, 100

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Total..... 80, 000

EXHIBIT F.

Engineer trade schools, Washington Barracks—(assuming a 3-months' course for 800 men).

SALARIES.

	Month.	Year.	Month.	Year.	Total.
Clerk.....			\$1,000	\$1,200	\$1,200

EQUIPMENT AND SUPPLIES.

Blacksmith shop.....	\$250	\$3,000			
Horseshoes.....			\$100	\$1,200	
Tools.....			25	300	
Steel and iron.....			100	1,200	
Coal.....			25	300	
Carpenter shop.....	600	7,200			
Lumber.....			500	6,000	
Hardware of all kinds.....			100	1,200	
Drafting school.....	100	1,200			
Paper.....			50	600	
Ink.....			25	300	
Instruments.....			25	300	
Electrical school.....	150	1,800			
Wire.....			100	1,200	
Tools.....			25	300	
Supplies.....			25	300	
Gas engine school.....	200	2,400			
Gas.....			100	1,200	
Oil.....			25	300	
Parts.....			50	600	
Tools.....			25	300	
Lithographic school.....	200	2,400			
Paper.....			100	1,200	
Ink.....			25	300	
Chemicals.....			50	600	
Plates.....			25	300	
Masonry school.....	500	6,000			
Brick.....			100	1,200	
Cement.....			200	2,400	
Sands.....			75	900	
Gravel.....			100	1,200	
Steel.....			25	300	
Machine shop.....	300	3,600			
Castings.....			100	1,200	
Steel.....			50	600	
Iron.....			50	600	
Brass.....			50	600	
Tools.....			50	600	
Welding school.....	1,000	12,000			
Oxygen.....			500	6,000	
Carbide.....			400	4,800	
Welding stock, including iron, steel, brass, and aluminum.....			100	1,200	
Plumbing school.....	150	1,800			
Pipe.....			75	900	
Fittings.....			40	480	
Lead.....			25	300	
Solder.....			10	120	
Photographic school.....	250	3,000			
Films.....			75	900	
Plates.....			25	300	
Chemicals.....			50	600	
Paper.....			100	1,200	
Rigging school.....	100	1,200			
Rope.....			50	600	
Spars.....			25	300	
Sheaves.....			25	300	
Stenographic school.....	100	1,200			
Paper.....			50	600	
Office supplies.....			50	600	
Survey school.....	100	1,200			
Paper.....			50	600	
Office supplies.....			50	600	
Proportion of administration and power house (Ex- hibit C) chargeable to trade schools.....					\$48,000
					3,000
Total.....					52,200

## EXHIBIT G.

This estimate is based on training approximately 4,000 students at this camp during the fiscal year 1920.

The number of students which will be in attendance at this camp during the fiscal year 1920 is approximately 4,000, or one-seventh of the number (28,000) in attendance during the fiscal year 1919. For 1919 an estimate of approximately \$210,000 was submitted. The estimate for 1920 is, therefore, placed at one-seventh of this amount, or \$30,000.

The information as to the number of students was furnished to this office by The Adjutant General.

*Statement showing character of unexpendable engine er material used at Infantry School of Arms.*

4 levels, mechanic's, at \$4.....	\$16. 00
4 tapes, matallic, 50 feet, at \$2.30.....	9. 20
15 triangles, 30-60°, 10-inch, at 80 cents.....	12. 00
15 triangles, 45°, 8-inch, at 80 cents.....	12. 00
14 reconnoissance equipment sketching outfit cases, at \$6.60.....	92. 40
9 clinometers, service, with leather cases, at \$8.90.....	80. 10
14 holders, timing pads, at \$1.50.....	21. 00
14 alidades, at \$1.25.....	17. 50
14 sketching boards, at \$7.55.....	105. 70
14 pencil pockets, at \$2.20.....	30. 80
14 tripods, wood, folding, complete, at \$4.25.....	59. 50
14 clinometers (Abney), hand level type (estimated at \$12 each).....	168. 00
150 axes, handled, 36-inch, at 72 cents.....	108. 00
11 boxes, ax (estimated at \$4 each).....	44. 00
11 boxes, saw (estimated at \$4 each).....	44. 00
30 crimpers, at 50 cents each.....	15. 00
7 carborundum wheels, at \$5.50.....	38. 50
2 pinch bars, large, at 80 cents.....	1. 60
7 hammers, sledge, 8 pounds, at 80 cents.....	5. 60
7 machetes, with sheathes, at \$1.50.....	10. 50
3 magneto exploders, at \$14.80.....	44. 40
225 pick mattocks, E. D. pattern, intrenching, at 48 cents.....	108. 00
450 shovels, E. D. pattern, intrenching, at 55 cents.....	247. 50
15 saws, crosscut, 2-man, 36-inch, at \$1.38.....	20. 70
2 saws, hack, at 50 cents.....	1. 00
15 saws, hand, rip, at \$1.30.....	19. 50
75 saws, hand, crosscut, 26-inch, at \$1.30.....	97. 50
1 saw set.....	1. 10
1 set saw tools.....	1. 10
180 pliers, side cutting, at \$1.25.....	225. 00
75 hammers, claw, at 45 cents.....	33. 75
7 blocks, double, wood, 8-inch, at \$3.22.....	22. 54
1 drill, rock, 2 feet long.....	. 60
7 blocks, single, wood, 8-inch, at \$2.06.....	14. 42
1 drill, rock, 4 feet long.....	1. 53
1 vise, machinist's.....	4. 00
4 spoons, miner's, long, at \$1.50.....	6. 00
1 saw, clamps, 10½ inch (estimated at \$5).....	5. 00
75 mauls, wood, at \$1.50.....	112. 50
8 shovels, long handled, at 75 cents.....	6. 90
80 picks, large, at \$1.25.....	100. 00
2,250 angle iron posts, large, 6 feet (estimated at \$2 each).....	4, 500. 00
800 angle iron posts, small, 3½ feet (estimated at \$1.50 each).....	1, 200. 00
2,250 long screws, 3 feet (estimated at \$2 each).....	4, 500. 00
2,300 short screws, 6-inch (estimated at \$1.50 each).....	3, 450. 00
30 mallets, carpenter, at 25 cents.....	7. 50
8 lanterns, Deitz, at \$2.50.....	20. 00
3 shears, 8-inch, at 90 cents.....	2. 70
7 files, crosscut saw, at 22 cents.....	1. 54
75 hand axes, at 63 cents.....	47. 25
30 G. I. buckets (estimated at \$1.25).....	37. 50
4 adzes, handled, 32-inch, at \$1.35.....	5. 40
30 squares, 2-foot (estimated at 75 cents each).....	22. 50
30 squares, wood, 2-foot (estimated at \$1.25 each).....	37. 50
3 sets of chisels, wood, at \$2.75 per set.....	8. 25
<b>Total.....</b>	<b>15, 803. 68</b>



*Statement showing character of expendable Engineer material used at Infantry school of arms.*

14,000 lumber, board feet, at \$30 per 1,000.....	\$420.00
10,000 sand bags, at 13½ cents.....	1,350.00
750 celluloid sheets, at 14 cents.....	105.00
140 erasers, pencil, rubber, at 6 cents.....	8.40
375 timing pads, at 20 cents.....	75.00
12 gross, paper, sketching board sheets, at \$4 per gross.....	48.00
30 pencils, colored, green, at 10 cents.....	3.00
45 pencils, drawing H, at \$14 per gross.....	4.36
14 rolls, tape, adhesive, at 5 cents.....	.70
14 blades, hacksaw, at 40 cents.....	5.60
140 boxes, blasting caps, No. 6, at \$2.50 per box.....	350.00
450 flares, newmalite, at 25 cents.....	112.50
3,000 feet, fuse, Bickford, at 25 cents.....	750.00
4,000 pounds Triton, crystalline, at 90 cents.....	3,600.00
700 pounds Triton, copper plated, at \$1.....	700.00
7,500 pounds wire, barbed, at \$5.50 per 100 pounds.....	412.50
140 pounds nails, wire, 8d, at \$6 per 100 pounds.....	8.40
2,100 pounds 60 per cent dynamite, at \$35 per 100 pounds.....	735.00
4,000 pounds 40 per cent dynamite, at \$32.50 per 100 pounds.....	1,300.00
900 fuse lighters, at \$5 per 100.....	45.00
75 handles, hammer claw, at 10 cents.....	7.50
75 handles, hand axe, at 10 cents.....	7.50
4 handles, adze, at 15 cents.....	.60
110 handles, sledge, at 25 cents.....	27.50
210 handles, axe, at 15 cents.....	31.50
140 pounds nails, 10d, at \$6 per 100 pounds.....	8.40
140 pounds nails, 16d, at \$6 per 100 pounds.....	8.40
28 pounds nails, 60d, at \$6 per 100 pounds.....	1.68
60 pounds staples, large, at \$6 per 100 pounds.....	3.60
60 pounds staples, small, at \$7 per 100 pounds.....	4.20
14 rolls, tape, insulating, at 40 cents per roll.....	5.60
325 pounds wire, smooth, No. 14, at \$4 per 100 pounds.....	13.00
55 pounds nails, wire, 6d, at \$6 per 100 pounds.....	3.30
750 caps, blasting, electric No. 6, at \$2.50 per 100.....	18.75
550 feet, fuse, instantaneous, at \$5 per 100 feet.....	27.50
110 handles, maul, at 15 cents.....	16.50
900 feet, wire, firing, double lead, No. 14, at 1 cent per foot.....	9.00
3 reels, wire, firing, at \$1.50 per reel.....	4.50
14 wicks, lantern, Deitz, at 18 cents.....	2.52
75 handles, pick, railroad, 36'', at 15 cents.....	11.25
3 handles, saw, cross-cut, 2 man, at 10 cents.....	.30
4,500 feet tape, tracing, at ½ cent per foot.....	22.50
5 spools, cord, detonating, at \$2.98 per spool.....	14.90
1,750 feet smooth steel wire No. 7 at 12 cents per foot (estimated).....	210.00
210 rolls wire, rabbit, at \$6 per roll.....	1,260.00
210 bundles, expanded metal, at \$13 per bundle.....	2,730.00
75 sheets, corrugated iron, at \$1.30 per sheet.....	97.50
<b>Total.....</b>	<b>14,581.46</b>

EXHIBIT H.

ITEM A-7. FIELD ARTILLERY FIRING CENTER AND SCHOOL OF FIRE, FORT SILL.

These funds are required for local purchase of engineer material required at the following firing centers and School of Fire:

Brigade firing centers:

Fort Sill.....	\$4,000
Camp Jackson.....	5,000
Camp Kearny.....	2,000
Camp Bragg.....	5,000
Camp Knox.....	5,000
Camp Lewis.....	2,000
School of Fire, Fort Sill.....	7,000
Total.....	30,000

The following table gives an estimate of the material which will be required for the above purposes:

Fire control and drafting supplies.....	\$10,000
Timber for dugouts, bridges, command posts, etc.....	13,000
Camouflage material.....	3,500
Miscellaneous.....	3,500
Total.....	30,000

In the case of the above, as in the case of all other engineer training, it is impracticable to give in advance a definite statement of just the kinds and quantities of material which will be required. The above table is intended only to furnish information as to the general character of the material which may be used for engineer training of Field Artillery.

EXHIBIT I.

Camouflage development.....	\$10,000
The general purposes for which it is anticipated that these funds will be required are as follows:	
1 camoufleur (civilian).....	\$3,000
Paints (materials and processes).....	2,000
Pigments (materials and spectroscope analyses).....	1,000
Oils, glues and preservatives.....	1,000
Screen material.....	3,000
Total.....	10,000

EXHIBIT K.

Central map reproduction plant.

SALARIES.

	Month.	Year.	Portion chargeable to Engineer operations in the field.
Superintendent.....	\$250.00	\$3,000.00	\$2,250.00
Chief draftsman.....	175.00	2,100.00	1,570.00
12 draftsmen.....	125.00	18,000.00	13,500.00
4 negative cutters.....	100.00	4,800.00	3,600.00
1 lithographic foreman.....	150.00	1,800.00	1,350.00
1 processman.....	135.00	1,620.00	1,210.00
2 transferrers.....	125.00	3,000.00	2,250.00
1 clerk.....	116.66	1,400.00	1,050.00
Do.....	83.33	1,000.00	750.00
1 janitor.....	75.00	900.00	670.00
2 grainers.....	70.00	1,680.00	1,260.00
2 press feeders.....	70.00	1,680.00	1,260.00
1 forman printer.....	150.00	1,800.00	1,350.00
1 pressman.....	133.33	1,600.00	1,200.00
1 expert bindery worker.....	120.00	1,440.00	1,080.00
3 plate photographers.....	125.00	3,000.00	2,250.00
1 hand printer compositor.....	100.00	1,200.00	900.00

Central map reproduction plant—Continued.

EQUIPMENT AND SUPPLIES.

	Total required.	Portion chargeable to Engineer operations in the field.
Photographic equipment.....	\$5,000.00	\$2,300.00
Drafting equipment.....	2,000.00	920.00
Lithographic equipment.....	4,500.00	2,070.00
Sensitized paper and plates.....	9,500.00	4,370.00
Chemicals.....	8,000.00	3,680.00
Lithographic supplies.....	11,000.00	5,060.00
Paper.....	24,000.00	11,635.00
Ink.....	8,000.00	3,680.00
Aluminum plates.....	10,000.00	4,600.00
Drafting supplies.....	3,000.00	1,380.00
Mounting and shipping supplies.....	3,000.00	1,380.00
Upkeep of building.....	2,000.00	920.00
Total.....	90,000.00	41,395.00

Portion chargeable to Engineer operations in the field:		
Salaries.....		\$37,500.00
Equipment and supplies.....		41,395.00
Proportion of administrative power house (Exhibit O) chargeable to central map reproduction plant.....		3,000.00
Total.....		81,895.00

EXHIBIT L.

Relief map division, central map reproduction plant.

SALARIES.

	Month.	Year.	Portion chargeable to Engineer operations in the field.
Chief wax modeler and draftsman.....	\$175.00	\$2,100.00	\$2,100.00
6 draftsmen and wax modelers.....	125.00	9,000.00	9,000.00
Foreman of processmen and printers.....	125.00	1,500.00	1,500.00
5 processmen and printers.....	125.00	7,500.00	7,500.00
1 clerk.....	100.00	1,200.00	1,200.00
Total.....		21,300.00	21,300.00

EQUIPMENT AND SUPPLIES.

	Total required.	Portion chargeable to Engineer operations in the field.
Tools.....	\$2,000.00	\$1,500.00
Machinery.....	3,000.00	2,250.00
Metal.....	300.00	300.00
Wax.....	150.00	150.00
Paper.....	1,000.00	790.00
Plaster.....	50.00	50.00
Miscellaneous supplies.....	500.00	500.00
Total.....		5,540.00

## EXHIBIT M.

*Central photographic laboratory.*

## SALARIES.

	Month.	Year.	Portion chargeable to Engineer operations in the field.
Foreman.....	\$200.00	\$2,400.00	\$2,040.00
2 photographers.....	125.00	1,500.00	1,270.00
6 transfer operators.....	100.00	7,200.00	6,120.00
1 darkroom man.....	100.00	1,200.00	1,020.00
1 artist.....	125.00	1,500.00	1,270.00
1 janitor.....	75.00	900.00	760.00
1 clerk.....	100.00	1,200.00	1,020.00

## EQUIPMENT AND SUPPLIES.

	Total required.	Portion chargeable to Engineer operations in the field.
Cameras.....	\$7,500.00	\$4,465.00
Photographic printing equipment.....	7,500.00	4,465.00
Sensitized paper and plates.....	21,500.00	12,806.67
Films for arial photography.....		7,000.00
Motion-picture films.....		4,323.33
Chemicals.....	5,500.00	3,266.33
Furniture.....	1,500.00	810.33
Supplies for mounting and shipping.....	3,500.00	2,076.67
Upkeep of building.....	2,000.00	1,186.67

## Proportion chargeable to Engineer operations in the field:

Salaries.....	\$13,500.00
Equipment and supplies.....	40,400.00
Proportion of administrative and power house (Exhibit O) chargeable to central photographic laboratory.....	2,050.00
Total.....	55,950.00

## EXHIBIT N.

*Printing office.*

## SALARIES.

	Month.	Year.	Portion chargeable to Engineer operations in the field.
Foreman.....	\$166.00	\$2,000.00	\$1,495.00
Clerk.....	100.00	1,200.00	897.00
2 pressmen.....	133.33	3,200.00	2,395.00
2 press feeders.....	60.00	1,440.00	1,077.00
2 linotype operators.....	125.00	3,000.00	2,245.00
Job pressman.....	100.00	1,200.00	897.00
Floorman.....	100.00	1,200.00	897.00
3 compositors.....	83.33	3,000.00	2,245.00
6 binders.....	70.00	5,040.00	3,780.00
Janitor.....	75.00	900.00	672.00
Messenger.....	50.00	600.00	450.00

*Printing office.—Continued.*  
EQUIPMENT AND SUPPLIES.

	Total required	Portion chargeable to Engineer operations in the field.
Printing equipment.....	\$14,447.77	\$12,322.00
Bindery equipment.....	2,500.00	2,175.00
Paper.....	20,000.00	17,325.00
Ink and binders supplies.....	6,500.00	5,525.00
Upkeep of building.....	2,000.00	1,700.00

## Portion chargeable to Engineer operations in the field:

Salaries.....	\$17,050
Equipment and supplies.....	\$9,565
Proportion of administrative and power house (Exhibit O) chargeable to printing office.....	2,500
<b>Total.....</b>	<b>\$29,115</b>

## EXHIBIT O.

## Administration.

## SALARIES.

	Month.	Year.	Portion chargeable to Engineer operations in the field.
Chief clerk and assistant superintendent of plants.....	\$300.00	\$2,400.00	\$1,538.00
Financial clerk.....	150.00	1,200.00	1,154.00
Order clerk.....	125.00	1,500.00	962.00
Stenographer.....	125.00	1,500.00	962.00
Do.....	100.00	1,200.00	769.00
Property clerk.....	100.00	1,200.00	769.00
File clerk.....	100.00	1,200.00	769.00
Janitor.....	75.00	900.00	577.00

## EQUIPMENT AND SUPPLIES.

	Total required.	Portion chargeable to Engineer operations in the field.
Furniture.....	\$400.00	\$273.00
Typewriting machines.....	250.00	177.50
Stationery.....	1,300.00	881.00
Office sundries.....	1,050.00	713.50

*Power house.*

## SALARIES.

	Month.	Year.	Portion chargeable to Engineer operations in the field.
Engineer.....	\$166.00	\$2,000.00	\$474.00
2 firemen.....	75.00	1,800.00	426.00

## EQUIPMENT AND SUPPLIES.

	Total required.	Portion chargeable to Engineer operations in the field.
Machinery.....	\$900.00	\$40.75
Lubricants and waste.....	250.00	12.50
Supplies for repair work.....	500.00	23.00
Upkeep of buildings and machinery.....	550.00	23.75
Total.....		1,000.00

## Portion chargeable to Engineer operations in the field:

## Administration—

Salaries..... \$7,500  
Equipment and salaries..... 2,050

## Power house—

Salaries..... 900  
Equipment and salaries..... 100

Total..... 10,550

## The above is chargeable to the following:

Central map-reproduction plant (Exhibit K)..... 3,000  
Central photographic laboratory (Exhibit M)..... 2,050  
Printing office (Exhibit N)..... 2,500  
Trade schools (Exhibit F)..... 3,000  
Total..... 10,550

DECEMBER 20, 1918.

*Salaries and expenses, technical engineer design and procurement division.*

	Salaries.	
	Per annum.	Total.
1 expert physicist.....	\$3,300.00	\$3,300.00
1 engineer.....	3,000.00	3,000.00
1 assistant engineer.....	3,000.00	3,000.00
1 mechanical engineer.....	2,700.00	2,700.00
3 inspectors.....	2,400.00	7,200.00
6 draftsmen.....	2,000.00	12,000.00
5 clerks.....	1,800.00	9,000.00
1 stenographer.....	1,500.00	1,500.00
5 clerks.....	1,500.00	7,500.00
14 clerks.....	1,200.00	16,800.00
1 messenger.....	1,000.00	1,000.00
Total.....		67,000.00

Estimated salaries..... \$67,000.00  
Estimated office expenses..... 3,000.00

Total..... 70,000.00

1. This division is essentially the supply division of the Corps of Engineers, and has charge as such of the purchase and production of rolling stock, special railway machinery and tools, knocked-down marine equipment, railway steam shovels, pile drivers and special cranes, all searchlights and auxiliaries for Army and coast defense uses; ranging equipment for Army and coast defense use; all materials, equipment with supplies for river and harbor and seacoast fortifications work; all purchases made for experimental and research work; all in accordance with Supply Circular No. 101, Purchase, Storage, and Traffic Division, General Staff.

2. It also, in connection with development work done under the direction of the Board on Engineer Troops, provides design and drafting facilities. The routine work of supply must, both for the Army and for seacoast and fortification work, most obviously continue in peace as in war, and the development work should properly be done in peace time rather than in war time. It is therefore necessary that a sufficient organization be set up to care for these duties.

3. The expert physicist and the 4 extra clerks in the last two lines in the above table of personnel are necessary in connection with work now in this division, as a result of production still continuing and of arrangements made in connection with contracts which are now being placed.

4. The amount of this personnel in D. G. M. R. would depend largely upon the amount of production work necessary in connection with the completion of orders for rolling stock, now in the hands of others in the office of the D. G. M. R. The number of officers in this division has been greatly reduced and between 30 and 40 enlisted men will presently be taken from our force. Opportunity will be given to those who desire to keep their present positions at proper civilian pay, if they so desire, and if the work which they are now doing is such as will continue under peace conditions. There were 150 in this division on November 1, 1918.

C. M. GOODRICH,  
Major of Engineers.

ENGINEER OPERATIONS IN THE FIELD, 1919.

1. Appropriated:		
Act July 9, 1918.....	\$892, 000, 000. 00	
Act Nov. 4, 1918.....	126, 250, 000. 00	
		\$1, 018, 250, 000. 00
2. Disbursements:		
In United States—		
To Dec. 6, 1918, for material purchased by the general Engineer depot, including the Director General Military Railways and the Director of Purchases.....	59, 089, 735. 15	
All other disbursing officers in the United States to Oct. 31.....	1, 677, 059. 68	
In Europe—		
(Allotted to A. E. F. up to Dec. 1; information as to disbursements not available).....	36, 512, 000. 00	
		97, 278, 794. 83
3. Balance.....		920, 971, 205. 17
4. Unpaid obligations chargeable to balances in item 3:		
General Engineer depot, including Director General Military Railways and Director of Purchases, including Director General Military Railways to Dec. 6....	252, 153, 222. 58	
All other disbursing officers to Oct. 31. ....	185, 354. 76	
Reserved for allotment to A. E. F..... <sup>1</sup>	200, 000, 000. 00	
To be transferred to the Motor Transport Corps, in accordance with G. O. 75, W. D. 1918, to cover motor vehicles to be procured by that corps instead of the Corps of Engineers.....	4, 466, 110. 27	
		456, 804, 687. 61
		464, 166, 517. 56

<sup>1</sup> Increased from \$81,288,000 to \$200,000,000 by cable from A. E. F.

## 5. Unobligated (or free) balances:

(NOTE.—In statement originally furnished to the Director of Finance, the above two items were not included under this head, but were carried under item 7, "Anticipated requirements for the remainder of the fiscal year," but information has been received from the office of the Director of Finance that, in reporting our figures to Congress, these two items were transferred to the head of "Unpaid obligations.")

## 6. Estimated savings on outstanding obligations:

Cancellations of orders placed by General Engineer Depot and the Director of Purchases .....	\$49, 750, 000. 00
Cancellations of orders placed by the Director General Military Railways.....	82, 102, 000. 00

**\$131, 852, 000. 00**

## 7. Estimated savings on unobligated (or free) balances shown in item 5:

Amount of free balances .....	464, 166, 517. 56
Anticipated requirements for remainder of fiscal year—	
Purchase of floating derricks, locomotives, spare parts, stevedore material, and for clerical hire of Director General Military Railways.....	8, 265, 000. 00
For completing maps of Artillery firing ranges—	
Camp Jackson project.....	112, 900. 00
Camp Bragg project.....	57, 248. 96
To make payments to field parties and office assistants on mapping work (this amount necessitated by changing from a military to a civilian status).....	107, 000. 00
Purchase of aerial cartographic equipment.....	5, 000. 00
Payment of Liberty loan and other allotments of civilian clerks overseas .....	40, 000. 00
Engineer training of 9th to 20th Infantry divisions.....	225, 815. 88
Engineer training at Infantry School of Arms, Columbus, Ga.....	100, 000. 00
Expenses of supply and Engineer training of special units, like the last item above.....	2, 000, 000. 00
Expenses of demobilization.....	2, 000, 000. 00
Additional for Engineer training at Field Artillery firing centers.....	4, 000. 00
Operation of central photographic laboratory, military trade schools, central mapping plant, etc., Washington Barracks.....	71, 030. 00
Camp Humphreys—	
Engineer School.....	20, 180. 00
Vocational schools.....	208, 900. 00
Ponton, bridge, and pioneer schools.....	20, 000. 00
Development works—	
Camouflage (remainder of development work under "Engineer equipment of troops")...	5, 000. 00
Changing personnel of camouflage development work from military to civilian status.....	2, 900. 00
Operations of Engineer depot, Hoboken: Estimated by depot officer at \$200,000 per month; this would make for remaining six months....	1, 200, 000. 00



7. Estimated savings on unobligated (or free) balances shown in item 5—Continued.

Anticipated requirements for remainder of fiscal year—Continued.

Office expense of machinery and engineering materials division, chargeable to Engineer appropriations. . . .	\$77, 500. 00	
Miscellaneous. . . . .	2, 000, 000. 00	
		<hr/>
		\$16, 422, 474. 84
		<hr/>
		447, 744, 042. 72
Estimated savings on cancellations. . . . .		131, 852, 000. 00
Estimated savings on unobligated balance. . . . .		447, 744, 042. 72

NOTES ON ENGINEER OPERATIONS IN THE FIELD, 1919.

Item 1 (appropriated): See Exhibit A attached for basis of 1919 appropriation.

Item 2 (disbursements):

In United States:

To Dec. 6, 1918, for material purchased by the General Engineer depot and the Director of Purchases (this includes purchases of Director General of Military Railways). . . . . \$59, 089, 735. 15

This item covers only payments actually made and (as will be noted by reference to item 4) represents only a small portion of the orders placed. These disbursements were for the following purposes:

1. Construction machinery. . . . .	9, 586, 425. 97
2. Light and power machinery. . . . .	346, 285. 56
3. Shop machinery. . . . .	716, 399. 96
4. Railway track material and fastenings. . . . .	10, 640, 184. 16
5. Railway motive power. . . . .	23, 639, 936. 53
6. Railway rolling stock. . . . .	764, 317. 63
7. Floating equipment. . . . .	17, 276. 40
8. Automotive transportation. . . . .	538, 725. 81
9. Horse-drawn transportation and supplies. . . . .	374, 421. 62
10. Lumber. . . . .	245, 095. 53
11. Building material and supplies. . . . .	51, 977. 20
12. Iron and steel and products thereof. . . . .	6, 598, 013. 20
13. Hardware. . . . .	432, 475. 35
14. Hand tools. . . . .	1, 004, 894. 61
15. Liquids, chemicals, explosives and accessories. . . . .	387, 068. 97
16. Engineer supplies. . . . .	2, 847, 857. 10
17. Reproducing and printing equipment. . . . .	58, 385. 85
18. Office supplies. . . . .	165, 351. 34
19. Office salaries and other supervisory expenses. . . . .	667, 467. 58
20. Miscellaneous. . . . .	7, 174. 78

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59, 089, 735. 15

All other disbursing officers in the United States to Oct. 31, 1918. . . . \$1, 677, 059. 68

The following is a general statement of the purposes covered by these disbursements:

Operation of subdepots and engineer instruction of troops . . . . .	\$73, 825. 36
Operation of embarkation depots. . . . .	1, 524, 457. 06
Miscellaneous. . . . .	78, 777. 26
	<hr/>
	1, 677, 059. 68

**In Europe:**

Allotted to A. E. F., up to Dec. 1 (information as to disbursements not available)..... **\$36, 512, 000. 00**

Allotments to disbursing officers with American expeditionary forces are made upon cablegram requests which contain no detail as to the purposes for which the funds are required. Reports are received from time to time as to the purposes for which these funds are expended, but no reports have yet been received as to expenditures from 1919 funds. The following are the general character of items which are purchased in Europe: Tools and equipment of all kinds; machinery; office supplies; automobile and truck supplies; track and ties; locomotives and cars; water service machinery; water service supplies; electric service machinery; electric service supplies; motorcycles and bicycles; depot stock and supplies; oil and gas storage; construction work; purchases, etc.

These purchases are made in France, Spain and Switzerland, both from the Government and private dealers.

**Item 3 (balance):**

This item represents the amount actually unexpended. As will be seen by reference to item 4, however, a large portion of this balance is required for payment of obligations which have actually been incurred.

**Item 4 (unpaid obligations chargeable to balances in item 3):**

General Engineer depot (including Director General Military Railways) and Director of Purchases to Dec. 6..... **\$252, 153, 222. 58**

(This amount covers obligations for the following purposes:)

Construction machinery.....	\$9, 660, 427. 91
Light and power machinery.....	15, 816, 143. 74
Shop machinery.....	2, 901, 804. 74
Railway track material and fastenings.....	42, 952, 795. 80
Railway motive power.....	85, 676, 073. 28
Railway rolling stock.....	74, 908, 385. 41
Floating equipment.....	299, 881. 58
Automotive transportation.....	889, 991. 80
Horse-drawn transportation and supplies.....	969, 714. 85
Lumber.....	249, 209. 52
Building material and supplies.....	138, 211. 80
Iron and steel and products thereof.....	11, 851, 734. 44
Hardware.....	948, 783. 38
Hand tools.....	1, 014, 725. 82
Liquids, chemicals, explosives, and accessories..	387, 068. 97
Engineer supplies.....	3, 216, 063. 83
Reproducing and printing equipment.....	58, 385. 85
Office supplies.....	212, 251. 75
Miscellaneous.....	579. 93
General.....	988. 18

252, 153, 222. 58

All other disbursing officers to Oct. 31..... **185, 354. 76**

This covers obligations for the following general purposes:

Operation of subdepots and engineer instruction of troops.....	19, 834. 58
Operation of embarkation depots.....	65, 772. 03
Miscellaneous.....	99, 748. 15

185, 354. 76

Reserved for American Expeditionary Forces..... **200, 000, 000. 00**

(This item is based on cables P-1470 and P-1520, from the American Expeditionary Forces, giving an estimate of the funds which will be required by disbursing officers with the American Expeditionary Forces up to and including December, less the amount which has been allotted since these reservations were made. The estimates contained in these cables were made while the war was in progress, but as they cover the period to Jan. 1 only they are taken as the best estimate

available which will be required by the American Expeditionary Forces up to June 30, 1919 (under peace conditions). A cablegram has been sent to the American Expeditionary Forces asking for an estimate of the funds which will be required by disbursing officers in Europe during the remainder of the current fiscal year under present conditions, but no reply has yet been received. (NOTE.—Since this was written reply has been received; see note.) (NOTE.—This change made by cable from American Expeditionary Forces stating that \$200,000,000 will be required during remainder of fiscal year.) (See p. 94 for Cables.)

To be transferred to Motor Transport Corps in accordance with G. O. 75, W. D. 1918, to cover motor vehicles to be procured by that corps. When the 1919 estimates were submitted, it was anticipated that the vehicles covered by this amount would be purchased by the Corps of Engineers, but subsequent to the submission of the 1919 estimates War Department Regulations placed the procurement of all motor vehicles for the Army under the Motor Transport Corps, and directed that all funds which had been appropriated for motor vehicles be transferred to the Motor Transport Corps..... \$4, 466, 110. 27

Item 5 (unobligated or free balances): This is the difference between the total of item 4 and item 3.

Item 6 (estimated savings on outstanding obligations).  
Cancellations of orders placed by the General Engineer Depot and the Director of Purchases (see Exhibit A1, p. 817)..... 49, 750, 000. 00

(This amount covers estimated savings on contracts for the following classes of materials and in the amounts indicated for each:)

Rails and track materials.....	\$27, 000, 000. 00
Water supply material.....	2, 500, 000. 00
Barbed wire.....	5, 000, 000. 00
Trench warfare material: Stakes, sheets, expanded metal, wire weaving, etc.....	1, 000, 000. 00
Building materials: Corrugated sheets, nails, bolts, etc.....	6, 500, 000. 00
Forestry equipment and machinery.....	250, 000. 00
Road-building machinery and wagon transportation.....	2, 000, 000. 00
Unit equipment, hardware and hand tools.....	1, 250, 000. 00
Machine-shop equipment.....	1, 500, 000. 00
Surveying and drafting equipment.....	1, 000, 000. 00
Electrical construction material.....	1, 750, 000. 00

49, 750, 000. 00

Cancellations of orders placed by Director General Military Railways (see Exhibit A2, p. 818)..... 82, 102, 000. 00

(This covers estimated savings on contracts for the following classes of material in the amounts indicated for each:)

1,500 locomotives, standard gauge.....	\$56, 662, 500. 00
801 locomotives, narrow gauge.....	5, 083, 000. 00
5,000 cars, standard gauge.....	5, 500, 000. 00
6,000 cars, standard gauge, metal parts (Byle Bacalan).....	7, 700, 000. 00
700 cars, standard gauge (dump).....	1, 627, 000. 00
3,469 cars, narrow gauge.....	522, 000. 00
967 cars, narrow gauge (dump).....	97, 000. 00
510 push cars.....	16, 000. 00
Spare parts for cars.....	257, 000. 00
243 cranes.....	4, 359, 000. 00
Gasoline electric sets and switchboards.....	278, 500. 00

82, 102, 000. 00

Item 7 (estimated savings on unobligated (or free) balances shown in item 5):

Amount of free balances..... 464, 166, 517. 56

Anticipated requirements for remainder of current fiscal year: Purchase of floating derricks, locomotives, spare parts, stevedore material, and for clerical hire of office of Director General Military Railways.....	\$8,265,000.00
(For details, see Exhibit "B" attached, p. 818.)	
For complete maps of Artillery firing ranges:	
Camp Jackson project.....	12,900.00
Camp Bragg project.....	57,248.96
Camp Hancock project.....	26,555.96
(For explanation, see Exhibit "C" attached, p. 820.)	
To make payments to field parties and office assistants on mapping work (this amount necessitated by change from a military to a civilian status).....	107,000.00
(For explanation see Exhibit "C" attached, p. 820.)	
Purchase of aerial cartographic equipment.....	5,000.00
For explanation see Exhibit "C", p. 820, attached.	
Payment of Liberty loan allotments of civilian clerks overseas.....	40,000.00
A number of the civilian employees who are on duty with the American expeditionary forces have made arrangements for a portion of their salaries to be paid to their dependents or other persons in the United States. The amounts thus paid are deducted from the payments made to these employees by the disbursing officers overseas. The amount of this item is that which it is estimated will be required to make these payments during the remainder of the current fiscal year.	
Engineer training of the 9th to 20th Divisions.....	225,815.88
The funds estimated under this head are required for the purchase of material for training in Engineer field operations of the Infantry divisions indicated. An allowance of \$15,000 for the first four months and of \$2,000 for each month thereafter is made for the purchase of material for training one Infantry division. The sum of \$225,815.88 is the difference between the total of the allowance for the twelve divisions indicated in the amount which has already been furnished to these divisions.	
Engineer training at Infantry School of Arms, Columbus, Ga.....	100,000.00
This is the amount which The Adjutant General has instructed the Chief of Engineers to allow for the purchase of Engineer material for the Infantry School of Arms. The Adjutant General states that this allowance should be made "irrespective of the declaration of peace."	
Expenses of supply and engineer training of special units like the last item above.....	2,000,000.00
This item is intended to cover miscellaneous requisitions for Engineer equipment, material and supplies for the Army and for engineer training of special Engineer organizations not included in the item for training of the 9th to 20th Infantry Divisions.	
Expenses of demobilization.....	\$2,000,000.00
(This item is intended to cover the expenditures which will have to be made from Engineer funds in connection with the demobilization of the Army. This will cover the removal of structures which have been erected for Engineer training, and other Engineer purposes; the filling in of trenches, etc.)	
Additional for engineer training at Field Artillery firing centers...	4,000.00
(An allowance of \$5,000 each has been made for the purchase of Engineer material for each Field Artillery brigade firing center. Allotments of \$4,000 each have been made for the four firing centers at Camp Jackson, Fort Sill, Camp Bragg, and Camp Knox, leaving \$1,000 each (or \$4,000 in all) to be allotted during the remainder of the current fiscal year.)	
Operation of Central Photographic Laboratory, military trade schools, Central Map Reproduction Plant, etc., Washington Barracks, D. C.	71,030.00
(For details and discussion, see Exhibit "D" p. 822.)	
Camp Humphreys:	
Engineer school.....	20,180.00

(This item is for the operation of the school for West Point graduates, established at Camp A. A. Humphreys, and covers the following items):

Salaries: 3 clerks, at \$100 per month .....	\$2, 100. 00
Text books: School library.....	400. 00
Laboratory equipment and chemicals for department of chemistry in engineering.....	1, 600. 00
Office and class room equipment, such as stationery, chalk, erasers, cleaning equipment, etc.....	550. 00
Supplies and equipment for department of drawing.....	920. 00
Supplies and equipment for department of mechanics of engineering.....	1, 270. 00
Supplies and equipment for instructors in civil engineering.....	1, 510. 00
Supplies and equipment for instructors in hydraulics.....	1, 830. 00
Installation of steam heating system and water in temporary buildings.....	3, 000
Gymnasium and apparatus.....	4, 000
	17, 180
Miscellaneous and contingencies.....	3, 000
	20, 180
Vocational schools.....	208, 900

(This item is for the trade schools at Camp A. A. Humphreys, and is required for the following purposes. These items contemplate the instruction of 1,000 men every three months.)

Items.	Equip- ment.	Supplies.
Mechanical schools:		
Woodworking equipment.....	\$10, 000	.....
Portable machine shops.....	25, 000	.....
Blacksmith shops.....	3, 000	.....
Heavy machine shop.....	30, 000	.....
Electrical shop tools.....	17, 000	.....
Pipe fitters and tinsmiths equipment.....	15, 000	.....
Supplies.....		\$14, 000
Total.....	100, 000	14, 000
Highway schools:		
Road machinery.....	5, 000	14, 000
Industrial railroad:		
Additional rolling stock and equipment.....	20, 000	8, 400
Standard railroad construction:		
Construction.....	17, 000	12, 000
Surveying, map reproduction, and sound ranging:		
Surveying.....	5, 000	.....
Sound ranging.....	5, 000	.....
Map reproduction.....	5, 000	.....
Supplies.....		3, 500
Total.....	157, 000	51, 900
Grand total.....		208, 900

Pontoon, pioneer, and bridge schools..... \$20, 000. 00

The following are the details of this estimate:

Pontoon school—

For purchase of timber and iron for improvising pieces of special equipment for use in modified types of floating bridges..... \$1, 000

Pioneer school—

For purchase of barbed wire, cement, steel shelters, timber for dugouts, and mine galleries..... 4, 000

Bridge school—

For purchase of timber, cement, iron, and sets of derrick irons, for use in erection of practice and semipermanent military bridges..... 15, 000

Total ..... 20, 000

## Development work:

Camouflage.....		\$5, 000. 00
(This is estimate submitted by the Board on Engineer troops, and covers the following purposes:)		
Purchase of paints, oils, and pigments.....	\$2, 500	
Purchase of screen material.....	2, 000	
Civilian labor.....	500	
Total.....	5, 000	
Changing personnel of camouflage development work from a military to a civilian status.....		2, 900. 00
(This is estimate submitted by the Board on Engineer troops, and covers payment to the following employees:)		
1 camoufleur, at \$4,000 per year for six months.....	\$2, 000	
2 laborers, at \$75 per month each for six months.....	900	
Total.....	2, 900	
Operations of engineer depot, Hoboken: Estimated by depot officer at \$200,000 per month, this would make for remaining six months. (This estimate was submitted by the depot officer upon basis of present conditions; change in conditions will probably make change in estimate.)		1, 200, 000. 00
Office expenses of machinery and engineer materials division, chargeable to this appropriation.....		77, 500. 00
(This estimate submitted by Col. Wheeler, chief machinery and engineering materials division, Purchase, Storage, and Traffic Division, General Staff. No details are available as to this estimate.)		
Miscellaneous.....		2, 000, 000. 00
This estimate covers the following: Allotments since October 31 and for which no information as to balances is available:		
Operation of embarkation depot, Hoboken.....	\$450, 000. 00	
Engineer instruction of Eighteenth Division.....	10, 000. 00	
Repairs to Pontonier.....	1, 500. 00	
Construction at Engineer School, Washington Barracks, of unit for making relief maps.....	1, 705. 00	
Fitting up and equipping central photographic laboratory, Washington Barracks.....	46, 400. 00	
Purchase of Bagley cartographs and equipment.....	4, 000. 00	
Miscellaneous purchases of Director General Military Railways.....	2, 000. 00	
	515, 605. 00	
Balances of allotment which are not actually obligated but which will be required:		
Operation of subdepots and instruction of troops.....	\$162, 337. 69	
Operation of embarkation depots.....	914, 770. 91	
Miscellaneous.....	61, 824. 59	
	1, 138, 933. 19	
Reimbursement to appropriations for "Engineer School" and "Military surveys and maps" for work performed at Engineer School at expense of these appropriations but which is properly chargeable to "Engineer operations in the field".....		
	46, 462. 37	
Unforeseen contingencies.....	298, 999. 44	
	2, 000, 000. 00	
		16, 449, 030. 80
Estimated savings on free balances.....		447, 717, 486. 76



111.4 E.

OCTOBER 8, 1918.

## EXHIBIT A.

E. O. F. 1919.

Memorandum for the chairman, Appropriations Committee, House of Representatives.

1. In further explanation of the deficiency estimate of \$335,000,000 previously submitted to cover "Engineer operations in the field, 1919," I beg to submit the following:

2. All constructions in France are under the charge of the Engineer Corps. In addition to that the materials required for the transportation department in France are supplied from the estimates of "Engineer operations in the field." The actual construction work is performed by troops, sometimes assisted in a minor degree by civilian laborers. The materials required for construction, including machinery and supplies of all kinds for buildings, sanitary plants, water supply lines, heating and lighting, are obtained on requisitions mainly in the United States, with the exception of lumber, which is cut in the forests in France to a very large extent. Purchases are made in England, France, Spain, Switzerland, and Italy, as far as practicable, to save transportation across the water. Although the amount of these purchases totals a very large sum, they form only a fraction of the total required. The requisitions in France for materials are based partly on adopted projects for camps, hospitals, and storehouses, and partly on estimates of expansions that must be made but which have not yet been crystallized into a fixed project. Other portions of the estimate are necessarily simply more or less intelligent guesses, since the absolute movements of the armies can not be predetermined, and each movement, either forward or to the rear, entails enormous expenditures of supplies for all the classes of construction that are found in the advance section. As an example, it may be stated that there were enormous stocks of barbed wire in France belonging to the allies in the early spring. Due to the movements of troops in the entire western theater of war, these stocks, which were considered ample in the spring, were practically exhausted by the fall. Each advance entails the construction of highways, bridges, light railways, and the extension of standard gauge railways. For the above reasons, the amount of construction required or of destruction caused by the enemy being unforeseen and unforeseeable, no absolute estimate of funds can be made which can be analyzed down to fixed units predetermined in amount. In making up the estimate for "Engineer operations in the field," therefore, the best that could be done was to find out the amount and cost of the various items under commodity headings called for from this country or purchased abroad, to determine approximately the relation between the cost of these supplies and the number of men engaged, to form from that an idea of the lump sum required and from that lump sum to base arbitrarily possible allotments to the various types of construction; but it should be clearly understood that, while construction of all these types will be carried on, the amount actually used for any one may vary very materially from the amount named in the memorandum previously submitted in support of the estimates.

3. During the first part of the fiscal year 1918, immediate preparations were being made to provide for 500,000 men by December 31, 1918, and operations were under way to eventually care for an army of 1,612,000 men. After the German drive of March, the schedule of troop movements was suddenly raised to bring 1,000,000 men in France by June 30, 1918. The present schedule demands that an army of 3,360,000 men be provided for during the fiscal year. In order to determine the funds necessary to provide for this army, it is estimated that the preparations and operations of the fiscal year 1918 were equivalent to those of 825,000 men at the end of the fiscal year. Comparing the figure 825,000 with 3,360,000 (the number of men which is to be provided for at the end of the present fiscal year), it is seen that the latter number is approximately four times the former. Although the expenditures under this appropriation are not exactly in proportion to the number of men, this figure (4) is accepted as the best ratio that can be secured between 1918 expenditures and 1919 expenditures.

4. The following schedule shows expenditures made under general commodity headings during the fiscal year 1918 and the estimated amount to be required under these commodity headings during the year 1919. This schedule does not include the railway materials and equipment to be purchased in the United States:

Items.	Expended during 1918.	Estimated needs during 1919, 3,360,000 — (4) 825,000 (expenditures of 1918).	1920, 60 per cent of 1919.
General machinery (construction plant, grading, road making, electrical, yard and dock, terminal).....	\$22,777,000	\$90,108,000	\$54,064,800
Iron and steel products (pipe, cast iron, and structural steel).. <td>42,695,000</td> <td>171,780,000</td> <td>103,068,000</td>	42,695,000	171,780,000	103,068,000
Hardware and tools (for construction and maintenance wharves and docks, general construction).....	20,923,000	83,692,000	50,215,200
Horse-drawn transportation.....	7,224,000	28,896,000	17,337,600
Building materials and supplies (roofing paper, wall board, expanded metal, etc.).....	10,370,000	41,480,000	24,888,000
Liquids (lubricants, oils, paints, etc.).....	1,681,000	6,724,000	4,034,400
Engineer supplies (rope, leather, rubber, instruments, copper, sandbags, etc.).....	43,132,000	172,528,000	103,516,800
Miscellaneous.....	4,742,000	18,968,000	11,380,800
Explosives and accessories.....	325,000	1,300,000	780,000
General construction work.....	1,166,000	4,654,000	2,792,400
Contingencies.....		620,130,000	.....
		3,870,000	.....
		624,000,000	.....

5. Referring to item No. 13 of the paper pertaining to this deficiency, now in your hands, it should be stated that a transfer from the Engineer Department of a large part of the purchasing agency and the supply depots in the United States is being effected. The exact line of discrimination between the new bureau thus established and the work of the Engineer Department has not been fixed. It is, therefore, best to make the provision carried in item No. 13 from which the necessary transfer of funds will be made when the transfer has been effected. Referring to item No. 14, "Instruction of troops in the United States," the estimates are based on the actual cost of instruction per division, training center or school, during the fiscal year 1918, and it is believed can not be reduced.

W. M. BLACK,  
Major General, Chief of Engineers.

Confidential.]

*Railway transportation materials for the construction, operation, and maintenance of standard gauge railways, light railways, port terminal facilities, and floating equipment.*

[Based on an army of 80 divisions overseas and 18 divisions in the United States (approved military program for fiscal year 1919).]

ITEM NO. 1.

400 locomotive cranes.....	\$5,549,000
Pile drivers, steam shovels, derricks, etc.....	4,942,000
Maintenance tools.....	750,000
3,250 push cars, standard gauge.....	179,000
3,080 steam locomotives, standard gauge.....	123,200,000
120 petrol locomotives, standard gauge.....	2,640,000
625 steam locomotives, 60 cm. gauge.....	3,215,625
625 gasoline locomotives, 60 cm. gauge.....	2,174,375
68,000 freight cars, standard gauge.....	176,800,000
7,500 cars of various types, 60 cm. gauge.....	7,500,000
2 general repair shops.....	5,000,000
23 roundhouse equipment.....	2,500,000
Central shops, present (70 per cent addition).....	900,000
1 central shop, new.....	1,500,000
12 roundhouse shops, local.....	500,000
80-pound rail and fastenings (4,875 track miles).....	39,315,440
25-pound rail and fastenings (4,090 track miles).....	16,292,050
13 floating pile drivers.....	245,000
25 seagoing tugs.....	8,750,000
18 tugs.....	3,000,000
15 floating steam barges.....	2,700,000



5 steam tenders.....	\$1,000,000
320 lighters.....	6,400,000
5 coal docks.....	5,000,000
33 floating derricks.....	3,000,000
162 floating barges.....	4,000,000

## ITEM NO. 2.—MAINTENANCE.

Standard gauge locomotives.....	7,000,000
60 cm. locomotives.....	3,600,000
Standard gauge freight cars.....	4,200,000
60 cm. freight cars.....	2,200,000
Maintenance, repairs, replacements, plant, tools, steam shovels, locomotive cranes, docks, and port facilities..	21,000,000

## ITEM NO. 3.—MISCELLANEOUS.

Fuel.....	\$95,000,000	
Lubrication.....	800,000	
Trackage over French railways from ports to American base.....	18,750,000	
Cost of maintenance and power of terminals at ports....	7,500,000	
		<u>\$587,102,490</u>

Plant and materials for the operation and maintenance of the Engineer services of the American Expeditionary Forces.

## ITEM NO. 4.—CONSTRUCTION.

Hospitals, cantonments, wharves, storehouses, and depots	\$450,000,000	
Forestry service.....	25,000,000	
Road service.....	15,000,000	
Quarry service.....	5,000,000	
Water supply service.....	50,000,000	
Electrical mechanical service.....	25,000,000	
Mining mechanical service.....	5,000,000	
Shop and supply service.....	45,000,000	
Camouflage service.....	4,000,000	
		<u>624,000,000</u>
Materials for instruction of troops in Engineer field operations in United States.....		6,000,000
Maintenance and operation of Engineer purchase and supply service in the United States.....		9,350,000
Payment of civilian employees in France.....		500,000
Add for requirements which would have existed without present war.		47,510
		<u>1,227,000,000</u>
Total estimate.....		1,227,000,000
Less amount already appropriated for fiscal year.....		892,000,000
		<u>335,000,000</u>
Additional amount estimated necessary.....		335,000,000

Cable No. X 329.

Paragraph No. 13.

Date, Dec. 3, 1918.

Sent from O. C. E. Dec. 2, 1918, 4.30 p. m.

Received back O. C. E., Dec. 4, 1918, 10.30 a. m.

HARBORD, *Amexforce, France.*

No. X 329.

Par. 13.

Col. Cress, Engineer Depot:

Paragraph. For Langfitt. Cable estimate of Engineer funds which you will require up to June 30, 1919, under present conditions.

J. M. WRIGHT, *Colonel Engineers.*

[Extract cablegram received at the War Department December 9, 1918.] •

No. 42 00.

Engineers.

WASHINGTON, D. C.

From H. A. E. F., 5.55 p. m.

To The Adjutant General.

"x" for action.

"v" for information.

Cable No. SOS 580.

Par. No. 6.

Date 12/9/18.

Received O. C. E., 2.40 p. m., 12/10/18.

Reply, or report due, noon ———.

Paragraph 6. For Chief of Engineers. Reference X 329, paragraph 13. Estimate engineer funds require to June 30th, 1919, two hundred million dollars. Langfitt.

HARBORD.

NOTE.—This apparently does not cover the funds for Transportation Corps, estimate for which was requested in X 340-5A

G. B. B.

Col. CRESS, Engineer depot:

Cable No. X 350.

Paragraph No. 4.

Date, Dec. 12, 1918.

Sent from O. C. E., Dec. 11, 1918, 4.55 p. m.

Rec'd back O. C. E., Dec. 13, 1918, 11 a. m.

Approved.

FREDERICK B. ABBOT<sup>d</sup>,

*Brig. Gen., Acting Chief of Engineers.*

G. B. BYAM, *Captain, Engineers.*

HARBORD,

*Amexforce, France.*

No. X 350.

Per. 4.

Paragraph. For Langfitt. Reference X 329, paragraph 13. Requesting estimate Engineer funds required by A. E. F., disbursing officers from now to June 30, 1919. Your estimate 200 millions in S. 580, paragraph 6, exceeds amount requisitioned similar period during war. Request confirmation and general statement of purpose for which funds are required.

GEO. W. GOETHALS,

*Major General, Assistant Chief of Staff,*

*Director of Purchase, Storage, and Traffic.*

Engineers.

[Extract from cablegram received at the War Department, Washington, D. C., December 19, 1918.]

From: Hdqrs. Amexforce, France.

To: The Adjutant General.

Lt. Col. Cress, to note:

Cable No. 644 SOS.

Par. No. 1.

Date, Dec. 18.

Rec'd O. C. E.

Text of SOS cable in 1 sheet (sheet 1), reply, or report due, noon, Dec. 27, 1918.

For Chief of Engineers. Reference X 350, paragraph 4. Estimate \$2,000,000,000 covers deferred obligations Engineer Department to French and British Governments and commercial concerns, among which are \$38,000,000 for forestry service, \$12,000,000 for artillery camp construction, various other outstanding account, and estimates of amount necessary to cover future purchases in Europe. \$63,000,000 has been included to cover estimated cost of cancellation of contracts and orders in England and France.

Langfitt.

HARBORD.

## EXHIBIT A-1.

E. O. F., 1919.

DECEMBER 7, 1918.

Memorandum for Col. Cress, Office Chief of Engineers.

Inclosed please find a copy of estimated savings due to suspensions and cancellations of orders on engineer operations in the field and equipment of engineer troops appropriations, as submitted to Gen. Rose on November 30. These are the best estimates available at the present time.

Regarding estimates for operating expenses of this division which would come out of Engineer operations in the field appropriation, we estimate that the civilian pay roll from December 1 to June 30, inclusive, will be approximately \$77,500. Kindly note that this includes simply the machinery and engineering materials division and does not include in any way the depot operations, or any other functions of the Corps of Engineers that have been transferred to other departments of purchase, storage, and traffic. I have no way whatever of estimating these, but suggest that Col. Butler, office of director of storage, may be able to help you on this portion of the appropriations.

EARL WHEELER,  
Lieutenant Colonel of Engineers,  
Chief Machinery and Engineer Materials Division.

## MEMORANDUM.

To: Brig. Gen. Rose.

NOVEMBER 30, 1918.

From: Lieut. Col. Wheeler.

In accordance with your circular memorandum of November 29, the following estimates are submitted:

*Appropriation—Engineer operations in the field.*

Material.	Total value uncompleted contracts and orders.	Value of undelivered portion of outstanding contracts and orders.	Government must receive—	Probable amount that will be left on hand.	Estimated savings by termination.
Rails and track materials	\$45,132,267.83	\$34,786,080.36	\$5,000,000.00	All salable at an unknown price.	\$27,000,000.00
Water supply material ..	3,775,837.74	2,981,434.83	300,000.00	.....do.....	2,500,000.00
Barbed wire.....	5,910,826.00	5,364,903.00	None.	None.....	5,000,000.00
Trench warfare materials, stakes, sheets, expanded metal, wire weaving, etc.	4,866,158.28	2,981,392.03	1,000,000.00	All at scrap value.	1,000,000.00
Building materials, corrugated sheets, nails, bolts.	9,069,397.64	7,577,529.63	500,000.00	All salable at an unknown price.	6,500,000.00
Forestry equipment and machinery.	591,515.12	479,005.27	150,000.00	Salable at greatly reduced price.	250,000.00
Road building, machinery, and wagon transportation.	5,395,229.06	3,517,947.86	1,000,000.00	Salable at an unknown price.	2,000,000.00
Unit equipment, hardware, and hand tools.	3,111,616.05	1,538,787.00	100,000.00	.....do.....	1,250,000.00
Machine shop equipment.	2,280,810.00	1,901,082.18	250,000.00	.....do.....	1,500,000.00
Surveying and drafting equipment.	5,713,515.76	3,857,254.18	3,000,000.00	Salable at greatly reduced price.	1,000,000.00
Electrical construction material.	2,712,303.00	2,122,134.00	225,000.00	Salable at an unknown price.	1,750,000.00
EQUIPMENT OF ENGINEER TROOPS.					
Wagon transportation...	141,600.00	112,100.00	30,000.00	Salable at an unknown price.	50,000.00
Unit equipment, hardware, and tools.	1,284,693.97	761,168.65	75,000.00	.....do.....	600,000.00
Surveying and drafting equipment.	464,374.54	393,156.14	300,000.00	Salable at greatly reduced price.	100,000.00
SIGNAL CORPS, EQUIPMENT OF TROOPS.					
Field glasses.....	16,439,019.50	13,190,002.00	1,690,002.00	All to be issued...	11,500,000.00
Wire and cable.....	44,835,621.74	26,473,680.23	17,861,941.50	Salable at greatly reduced price.	20,000,000.00
Line construction material and tools.	1,434,241.72	1,181,544.20	381,544.21	Salable at unknown price.	800,000.00
Miscellaneous supplies...	4,933,337.08	4,574,756.45	1,900,000.00	.....do.....	3,000,000.00
Total.....	157,572,365.03	113,793,958.02	33,763,487.72	.....	78,800,000.00

## EXHIBIT A-2.

*Office Director General Military Railways—Value of articles actually contracted for which will not be used and for which contracts will be canceled.*

Article.	Number.	Value of contract.	Cost of cancellation.	Net saving.
Locomotives, standard gauge.....	1,500	\$56,662,500	.....	\$56,662,500
Locomotives, narrow gauge.....	801	6,633,000	\$1,550,000	5,083,000
Cars, standard gauge.....	5,000	12,500,000	7,000,000	5,500,000
Cars, standard gauge, metal parts (Dyle Bacalan).....	6,000	10,700,000	3,000,000	7,700,000
Cars, standard gauge.....	700	2,315,000	688,000	1,627,000
Cars, narrow gauge.....	3,469	3,122,000	2,600,000	522,000
..... Do.....	967	122,000	25,000	97,000
Push cars.....	510	23,000	7,000	16,000
Spare parts for cars.....	.....	315,000	58,000	257,000
Cranes.....	243	4,860,000	501,000	4,359,000
Searchlight materials.....	.....	778,500	368,500	410,000
Sound and flash ranging.....	.....	77,000	35,000	42,000
Gasoline electric sets and switchboards.....	.....	478,500	200,000	278,500
.....	.....	98,586,500	16,032,500	82,554,000

WASHINGTON, D. C., December 6, 1918.

## EXHIBIT B.

The following quoted memoranda of December 7 and 9, 1918, from the Director General Military Railways, give the "Anticipated additional requirements" of the Director General Military Railways during the remainder of the current fiscal year, chargeable to "Engineer operations in the field," and an explanation thereof.

DECEMBER 7, 1918.

Memorandum for the Chief of Engineers:

1. Pursuant to your request of the 5th instant, for an estimate of the funds which will be required from appropriations for "Engineer operations in the field" and "Engineer equipment of troops" during the remainder of the fiscal year ending June 30, 1919, we submit the following:

Cost of cancellation of contracts allotted but not signed.....	\$515,000
Floating derricks <sup>1</sup> .....	450,000
Locomotives.....	200,000
Spare parts for standard gauge locomotives.....	1,500,000
Spare parts for standard gauge cars.....	1,500,000
Tools for locomotive and car repair men.....	500,000
Stevedore material.....	1,500,000
Raised pier cranes, spare parts therefor and for locomotive and Gantry cranes	2,000,000
Clerical hire.....	100,000
Total.....	8,265,000

2. We are not advised as to whether we will continue to maintain and operate the locomotives, cars, tracks, port and other facilities in France. We have cabled the A. E. F., requesting information on that subject, and if we are to maintain and operate the same we have asked for the estimated cost thereof.

(Signed) S. M. FELTON.  
Director General Military Railways.

DECEMBER 9, 1918.

Memorandum for the Chief of Engineers:

1. The following is an explanation of the estimate submitted to you on the 7th instant of funds which will be required from appropriation for engineer operations during the remainder of the fiscal year ending June 30, 1919:

Cost of cancellation of contracts allotted but not signed, \$515,000.

This is the estimated amount we will be required to pay because of the cancellation of contracts which have not been signed for locomotives and cars.

Floating derricks, \$450,000.

<sup>1</sup> It is expected that we will be able to dispose of the floating derricks after they have been completed.

We have arranged for the construction of the floating derricks *United States, England, Wilgus, and Belgium*. The construction had so far advanced that it was thought we could realize more out of the sale of the derricks in their completed form than otherwise.

Locomotives, \$200,000.

This covers our estimate for the needs of locomotives at engineer depots. At the present time we have already purchased 10 locomotives at a cost of \$118,000, which is included in this estimate.

Spare parts for standard gauge locomotives, \$1,500,000.

This includes requisitions not yet filled with a small estimate of additional requirements. The requisitions not yet filled are as follows:

Requisition 15.....	\$10, 000
Requisition 18.....	25, 500
Requisition 38.....	365, 000
Requisition S 180.....	30, 000
Requisition S 419-4.....	17, 000
Requisition SOS492-1.....	750, 000
Requirements Camp Humphreys.....	24, 000
<b>Total.....</b>	<b>1, 221, 500</b>

Spare parts for standard gauge cars, \$1,500,000.

This also includes requisitions not yet filled and an estimate of additional requirements.

For journal box packing.....	\$27, 500
Cable SOS 22-S.....	847, 000
Cable S-468.....	350, 000
<b>Total.....</b>	<b>1, 234, 500</b>

Tools for locomotive and car repair men, \$500,000.

These materials are covered by the following:

Requisition 8.....	100, 000
Requisition 15.....	325, 000
Requisition 27.....	48, 000
Requisition 28.....	34, 000
<b>Total.....</b>	<b>507, 000</b>

Stevedore material, \$1,500,000.

The purchase of this material is covered by requisition TSF No. 12.

Raised pier and other cranes, \$2,000,000.

Materials were requisitioned as follows:

Cable S-209.....	5, 000
Cable S-137-2A.....	3, 000
Cable S-18- 1}	32, 000
Cable S-531-2}	
Cable S-18- 1}	5, 000
Cable S-526-2}	
Cable S-122-1.....	602, 000
Requisition TSF 4.....	82, 000
Crane for Norfolk.....	20, 000
Estimated additional spare parts for cranes in this country and abroad....	1, 200, 000

It is expected that a large portion of these materials will be disposed of to the French and Belgian authorities.

Clerical hire, \$100,000.

It is estimated that this organization will consist of civilian personnel in which case it will require approximately 90 clerks at an average of \$15,000 per month.

S. M. FELTON,  
Director General Military Railways.

## EXHIBIT C.

Completion of survey at Camp Jackson..... \$12,900. 00

This item involves the completion of an accurate large-scale map of Camp Jackson. This point is a Field Artillery training center and will be continued as such after the conclusion of peace. Accurate large scale maps are essential to the conduct of proper artillery training. The item may be divided as follows:

Printing.....	\$3,000
Engraving.....	4,000
Salaries.....	2,700
Subsistence.....	1,900
Transportation.....	2,000
Miscellaneous.....	300

A number of soldiers who are engaged on work at this point will, in all probability, be discharged and it is proposed to replace these soldiers by civilians.

Completion of survey at Camp Bragg..... \$57,248. 96

Camp Bragg is a Field Artillery training center and its use as such will be continued upon the conclusion of peace. An accurate large-scale survey is being made of this point. Due to the necessity for large-scale maps for the proper training of Field Artillery, it is highly desirable that the survey be carried to a conclusion. The item involves—

Printing and engraving.....	\$15,000. 00
Transportation and miscellaneous field supplies.....	12,000. 00
Salaries and subsistence.....	20,248. 96

A number of officers and soldiers are engaged upon the survey at this point and in the event of their discharge the provision has been made to pay civilians to replace these men.

(Not required, see note below.)

Completion of survey at Camp Hancock..... \$26,555. 96

Camp Hancock is a machine-gun training center and there is under construction at that place a large-scale topographic map. Accurate large-scale topographic maps are essential to the proper training of machine gunners, and it is considered desirable to complete this survey in view of the possible use of this camp after the conclusion of peace. The item may be divided up as follows:

Printing.....	\$3,000. 00
Engraving.....	4,000. 00
Salaries.....	9,500. 00
Subsistence.....	5,500. 00
Transportation.....	4,000. 00
Miscellaneous.....	555. 96

There are a number of soldiers engaged upon the survey of Camp Hancock, and it is proposed to replace them by civilians, in the event of the soldiers being discharged. The estimate includes the pay of civilians for this work.

NOTE.—Since the preparation of this item it is learned that the abandonment of Camp Hancock is contemplated. The item may therefore be left out. The personnel will be transferred to one of the other operations. This should not increase the cost of these other operations, but should provide for their more early completion.

To make payment to field parties and office assistants on mapping work.. \$107,000

This item is to include the salaries to civilians to replace soldiers who are now engaged on mapping work. It includes field parties at work at Fort Sill, Okla., and Pensacola, Fla., and assistants in the offices of the various department engineers of the United States. The sum will cover the deficit against the appropriation for military surveys and maps caused by the changing of the work from a soldier to a civilian basis.

Purchase of aerial cartographic equipment..... \$5,000

This item is for the purchase of equipment to carry out aerial mapping. This equipment includes cameras, transformers, and various accessories to be used in connection with aeroplanes for the making of maps. The making of maps by this means is emerging from the experimental stage and with the large numbers of aeroplanes to be returned from Europe it is believed that this method of mapping will form a method for the rapid completion of maps of the United States.

ENGINEER SCHOOL,  
UNITED STATES ARMY,  
Washington Barracks, D. C., December 12, 1918.

From: The Commandant, Engineer School.  
To: Chief of Engineers, U. S. Army.  
Subject: Special Report of Operations.

EXHIBIT D.

1. The following is a summary of the operations of the Engineer School, the military trade schools, the central map reproduction plant, the central photographic laboratory, and the Engineer School Press during the period of the present emergency:

- (1) Engineer School:
- (a) No instruction of the officers was carried on in any of the departments of the Engineer School, this work having been suspended at the outbreak of the war.

(b) The Engineer School library has been maintained and books and periodicals purchased and received by donation. A number of bibliographies and reference lists have been prepared on special subjects of engineering and military interest and a weekly bulletin published in mimeographed form.

(c) The steamer *Pontonier* has been overhauled, gas engines have been installed, and a regular schedule has been maintained for the transportation of troops and supplies between Washington Barracks and Camp Humphreys.

(d) Models which are in the possession of the Engineer School have been taken care of.

(2) Military trade schools:

Military trade schools for the instruction of the enlisted personnel for engineering work overseas have been carried on in the following subjects:

Blacksmiths.	Surveyors.	Drafting.
Gas engines.	Masonry.	Photographers.
Oxyacetylene welders.	Rigging.	Electric.
Stenographers.	Carpenters.	Plumbing.
Machinists.	Lithography.	

The cost of operating these schools is largely dependent on the number of men. During July, August, September, and October an average of 500 men were undergoing training at a cost of 40 cents per man per day. When the number of men in the schools increased to 800 the cost dropped to 25 cents per man per day. It can safely be assumed that the average gross cost of instruction will be between these figures for any similar schools.

It has been found that the value of useful work done by the schools in their regular course of instruction and for which the Government would have had to pay outside firms in case the schools were not in operation will reduce the net cost to the Government of running these schools to approximately one-fourth the amount given above.

(3) Central map reproduction plant.

The central map reproduction plant has received 570 orders for reproduction work, calling for 746,694 impressions, at a total cost of \$81,409.14. The following is a table of the reproduction work carried on, showing the number of orders, the number of impressions, unit cost, and total cost of operation:

	Number of orders.	Number of impressions.	Cost.	
			Unit.	Total.
Progressive military maps.....	225	26,690	\$4.002	\$26,690.00
Miscellaneous maps.....	345	720,004	.076	54,719.14
Printing office.....	572	1,165,278	.04	34,947.01
Total.....	1,142	1,911,972	.062	116,356.15



## (4) Central photographic laboratory.

The central photographic laboratory has been in operation but a short time and is now in the organization stage. The purpose of this laboratory is for the development, printing, and transforming of aerial photographs in connection with map reproduction, and the taking, developing and distribution of moving pictures showing the duties and projects of the Engineers, to be used for instruction purposes and permanent records of engineering work.

## (5) Engineer school press.

The above table summarizes the work performed by the Engineer school press. A detailed statement of the work is inclosed herewith.

(Signed) H. S. HETRICK,  
Colonel, Engineers, U. S. Army,  
Acting Commandant.

1 inclos.

## ENGINEER OPERATIONS IN THE FIELD, 1918.

1. Appropriated:		
By act May 12, 1917.....	\$300,000.00	
By act June 15, 1917.....	94,500,000.00	
By act Oct. 6, 1917.....	186,000,000.00	
By act Mar. 28, 1918.....	70,000,000.00	
		\$350,800,000.00
2. Disbursements:		
In United States.....	215,378,108.50	
In Europe: Allotted to A. E. F. up to Dec. 6; information as to actual disburse- ments not available.....	99,243,263.60	
		314,621,372.10
3. Balance.....		36,178,627.90
4. Unpaid obligations chargeable to balances shown in item 3:		
General engineer depot and director of pur- chases to Dec. 6, 1918.....	23,026,974.81	
All other disbursing officers to Oct. 31...	152,930.83	
To be transferred to Motor Transport Corps in accordance with G. O. 75, W. D., 1918, to cover motor vehicle contracts trans- ferred to that corps.....	6,442,252.66	
		29,622,158.30
5. Unobligated (or free) balances.....		6,556,469.60
6. Estimated savings on outstanding obligations. (NOTE.—It is understood from machinery and engineering materials division; who have prac- tically all obligations under this appropriation, that all orders placed during fiscal year 1918 are too near completion to permit canceling.)		
7. Estimated savings on unobligated (or free) bal- ances shown in item 5: Unobligated balance.....		6,556,469.60
Anticipated requirements for remainder of current fiscal year:-----		
Miscellaneous contingencies.....		500,000.00
Estimated savings on free balances.....		6,056,469.60
SUMMARY:		
Estimated savings on unobligated balance.....		6,056,469.60



*Expenditures from Engineer funds made by officers in the A. E. F. from August, 1917,  
to June 30, 1918.*

Tools and equipment.....	\$36,891,263.11
Machinery.....	2,683,616.56
Office supplies.....	982,716.63
Automobile and truck supplies.....	502,861.50
Track and ties.....	3,227,308.75
Locomotives and cars.....	1,962,242.97
Water-service machinery.....	2,223,298.43
Water-service supplies.....	10,915,834.70
Electric service machinery.....	6,661,591.47
Electric service supplies.....	3,634,304.06
Motorcycles and bicycles.....	25,909.29
Depot stock and supplies.....	216,127.58
Oil and gas storage.....	131.24
Construction work.....	1,283,235.38
Barges.....	59,830.00
Miscellaneous.....	1,765,091.73
	<hr/>
	73,035,363.40

*Expenditures from Engineer funds made by officers in the A. E. F. from July 1 to  
October 31, 1918.*

General machinery.....	\$1,907,595.88
Iron and steel products.....	1,328,707.68
Hardware and hand tools.....	436,677.17
Railway rolling stock.....	344,160.63
Railway motive power.....	79,668.45
Track material and fastenings.....	543,178.89
Lumber.....	36,324.64
Motor transportation, etc.....	46,046.22
Horse-drawn transportation and supplies.....	396,984.55
Building material and supplies.....	3,935,214.60
Liquids.....	293,071.53
Explosives and accessories.....	322,208.83
Engineer supplies.....	6,544,104.20
Miscellaneous.....	826,687.45
Floating equipment and accessories.....	422,620.53
Hospitals.....	9,820,181.96
Barracks.....	10,453,347.45
Construction other than hospitals and barracks.....	2,352,780.02
Pay personnel and subsistence.....	2,499,318.00
Nonpersonal services.....	852,188.37
Rentals.....	81,719.86
Building and household equipment.....	704,744.71
Purchase of Swiss francs.....	868,500.00
	<hr/>
Total.....	45,096,031.62

## **CAMOUFLAGE WORK.**

### **WORK ACCOMPLISHED.**

Military camouflage is a development of the present war, and therefore had no history and little literature. It also differs from the purely scientific work of engineering, where variables are few and exact formulas may be worked out. Variable of light and color and position are infinite, and each problem of concealment is an individual one.

Camouflage naturally is divided into two branches, the factory where materials are made and the erection of this, and natural materials in the field. The field work covers many details, such as reconnaissance and choice of positions, and camouflage discipline.

Much study was given to both British and French materials and shop methods, as well as to the field employment of camouflage in both armies. After careful consideration, what seemed to be the best of both was taken as a basis for the work, both in factory and field for the A. E. F.

To briefly summarize, the British did nothing without the most careful scientific investigation, including aero-photography of all materials, while the French relied more on their innate artistic sense of color and form.

The British used Chinese labor to quite a large extent, with considerable labor-saving machinery; the French used hand labor, principally women, almost exclusively.

The British used principally burlap, cut in strips about 1 by 12 inches, colored with an oil emulsion paint, and knotted in fish nets and chicken wire for artillery covers. The French used raffia from Madagascar, dyed and knotted on nets and wire for the same purpose.

We adopted the British materials for the following reasons:

First, impossibility of finding a permanent dye.

Second, greater inflammability of raffia.

Third, scarcity and high price of raffia.

By the design and construction of various labor-saving machines by members of the section, a much greater amount of finished material proportional to the personnel was turned out than by the British or the French.

At first, most of the raw materials were obtained in France or England, but much better results were had when American materials arrived, notably paints; a reduction of 50 pounds weight with better color being obtained on a single fish net cover 32 by 32 feet. Improvements in minor details were made in many of the processes, particularly colors, a laboratory with two chemists being maintained at the factory.

Two important field devices were designed and made standard for the section, one being an improved frame and set for mobile artillery protection, which was afterward adopted by the British, and an umbrella machine gun cover, having many advantages over any previous type.

Individual ingenuity of camouflage officers in the field brought many good results, both with manufactured and natural materials, but these are so numerous that it is without the scope of this paper to describe them in detail.

At the time of the armistice it was the opinion of unprejudiced observers that the central camouflage works, A. E. F., at Dijon Haute Marne, was the best equipped and most efficient of the allied forces.

### **WORK TO BE ACCOMPLISHED IN FUTURE.**

The work which it is hoped to accomplish in experimental and research work by the camouflage section of the Technical Equipment and Procurement Division of the Engineer Department is as follows:

A. The investigation of all materials used in the manufacture of camouflage covers and a search for such materials which are commercially available, inexpensive, and adapted to the necessary coloring. Important items are permanent and nonfading

dyes, substitutes for burlap, nonreflecting, nonrusting wire for camouflage screens, colors possessing correct spectral values, which do not disclose the artificial material when photographed or viewed through ray filters, and color screens and ray filters.

B. Tests of permanent overhead covers for Coast Artillery batteries, with a view to ascertaining:

1. Methods of mounting covers so as not to interfere on platforms with loading trucks.

2. Resistance of mountings and cover to blast.

C. Tests of visibility by aerophotos secured in liaison with Air Service.

D. Layout of buildings and machines necessary for the production of camouflage materials for instruction purposes at Engineer and Field Artillery posts, and plans for extension in time of war either in the United States or abroad. No locations for buildings or testing grounds are as yet decided on.

## DEVELOPMENT AND EXPERIMENTS.

The advantages accruing from the continuance of the development work which has been carried on during the war are twofold. First, it means a material, possibly a vital, saving of time in the event that preparation for war becomes necessary. Second, it effects an enormous saving of expense in the purchase of equipment in quantity. It is only necessary to have one machine or instrument of a given type fully developed in order to accomplish this. Consider the time and money that would have been saved to this country, for example, had we had just one airplane of each required type fully developed at the time we entered the present war.

In the purchasing of equipment it is desirable, if not absolutely essential, that we know exactly what is wanted, and the money necessary to carry on a systematic study of our equipment over a period of one or two decades is insignificant compared with the resultant saving in expense when it becomes necessary to purchase equipment in large quantities, not to mention the saving in time which in itself may be vitally important.

The practice in general followed in the development of commercial apparatus to meet military needs is for the officer in charge of the work to study the commercial field carefully and then to select the type or types best suited to military needs, or requiring the least modification. An order is then placed for one or more machines with such modifications as may be necessary, and these machines are then tested and perfected. In this estimate, therefore, where prices of single machines are given they should not be compared with prices of standard commercial machines, since they include, in addition to such prices, whatever initial development is necessary.

In the more technical work, where instruments of a special type having little or no commercial application are needed, the plan is to provide a civilian scientist with such equipment and assistants as may be necessary. It should be understood that the progress expected and the cost of work of this nature is so dependent on the results obtained from day to day that neither can be closely specified. The discovery of a single day may equal or exceed the progress of a year's investigation, and completely upset all estimates, both as to results to be accomplished and cost of same.

In most of the technical development covered by this estimate, the results secured to date, astonishing as they are in some cases, are of chief interest in the indications they give of more important advances which are possible if the work is properly continued. It should be borne in mind, however, that this work is highly technical and requires thoroughly trained operators in case of war. Even, therefore, if no material progress were expected from a continuance of the experimental work, it is vitally necessary that a small force be kept at work to provide a nucleus for the training of personnel when the occasion arises. Unless this is done the advances now made will soon be lost.

## **ENGINEER TROOPS.**

### **ENGINEER TROOPS TO BE INCLUDED IN PROPOSED NEW ARMY.**

#### **Divisional troops:**

- 20 sapper regiments.
- 20 Engineer trains.

#### **Corps troops:**

- 5 corps headquarters.
- 5 sapper regiments.
- 5 Engineer trains.
- 5 pontoon trains.

#### **Army troops:**

- 1 Army headquarters (1 brigadier general).
- 1 electrical and mechanical regiment.
- 5 light railway and roads regiments.
- 1 camouflage battalion (battalion headquarters, 2 companies).
- 1 sound and sight ranging battalion (battalion headquarters, 5 companies).
- 1 searchlight regiment (regiment headquarters, 2 battalion headquarters, 10 companies).
- 2 mounted battalions.
- 2 Engineer trains (Cavalry division).

**NOTE.**—The above is based on 20 combat divisions, while our estimates provide for 20 combat divisions and 4 depot divisions. If this latter project is followed, the above table will be increased by 4 sapper regiments and 4 Engineer trains.

# ORGANIZATION OF ENGINEER CORPS.

Copy of 320.2-E. 523.

NOVEMBER 23, 1918.

## MEMORANDUM TO WAR PLANS DIVISION, GENERAL STAFF.

1. In accordance with your memorandum of November 19 the following recommendations as to strength and composition of the Corps of Engineers for a Regular Army of 5 corps and 20 divisions are submitted.

2. Table I shows the division, corps, and Army Engineer troops. Companies are reduced to about 75 per cent of maximum strength; all service battalions and certain other organizations have been eliminated as being easily organized at the outbreak of war.

Item 1: Sapper regiments, organized as per Table of Organization No. 29, with following changes:

	Table of Organi- zation figures.	Revised figures.
Company:		
First lieutenants.....	3	2
Second lieutenants.....	2	1
Sergeants, first class.....	6	5
Sergeants.....	15	11
Corporals.....	40	30
Cooks.....	5	4
Privates, first class.....	56	42
Privates.....	112	84
Regimental headquarters: Captains.....	4	3

This gives a total Engineer personnel in one sapper regiment of 34 officers and 1,265 enlisted men, plus one band of 1 officer and 49 enlisted.

Item 2: Divisional engineer trains organized as per Table of Organization No. 27. No reduction in strength is recommended, as the duties of the train personnel are dependent upon the amount of Engineer equipment for the division carried in the train. Information from the American Expeditionary Forces is to the effect that the Engineer train now with our forces contain insufficient personnel.

Item 3: Corps headquarters, as per Table of Organization No. 102, except that one captain should be substituted for two under heading, "Corps of Engineers."

Items 4 and 5: Corps sapper regiments and trains. The same strength as items 1 and 2.

Item 6: Corps pontoon trains, as per Table of Organization No. 113, with no reduction from the maximum strength.

Item 7: Army headquarters, as per Table of Organization No. 202, except that the Chief Engineer of the Army should be a brigadier general. This officer in the French and British services is a major general, and in each of our armies in France is a brigadier general. He commands about 50,000 troops, and evidently should have the rank of general officer.

Item 8: Mining regiment. It is not recommended that this regiment be organized in time of peace.

Items 9 and 10: Water supply and general construction regiments. It is recommended that these regiments be not organized as such in time of peace. Personnel to form a nucleus for these organizations can be well utilized and trained in time of peace in the construction and maintenance of permanent posts. The personnel is, therefore, included under item 13, Table II.

Item 11: Supply regiment. It is not recommended that this regiment be organized in time of peace.

Item 12: Surveying and printing battalion, as per Table of Organization No. 301, with following revisions:

	Table of organi- zation figures.	Revised figures.
Battalion headquarters company:		
Captains.....	2	1
First lieutenants.....	3	2
Second lieutenants.....	2	1
Sergeants, first class.....	4	3
Sergeants.....	11	8
Corporals.....	20	15
Cooks.....	5	3
Privates, first class.....	198	50
Privates.....		
		100

Item 13: Road regiment. It is recommended that this regiment, in time of peace, be consolidated with the light railway regiments to form a light railway and road service.

Item 14: Electrical and mechanical regiment, organized as per Table of Organization No. 301, with the changes noted under item 12, also with a reduction from 4 to 3 captains in regimental headquarters.

Item 15: Light railway and roads regiments, organized as per Table of Organization No. 301, with revisions noted in item 14.

Items 16 and 17: It is not recommended that these regiments be organized in time of peace.

Item 18: Camouflage battalion, consisting of battalion headquarters and 2 companies, organized as per Table of Organization No. 301, as corrected in item 14.

Item 19: Sound and sight ranging battalion, consisting of 1 battalion headquarters, as per Table of Organization No. 301, and 5 companies, as per column 9 of Table of Organization No. 111, revised as follows:

	Table of Organi- zation figures.	Revised figures.
Company:		
First lieutenants.....	9	7
Second lieutenants.....	8	6
Sergeants, first class.....	7	5
Sergeants.....	16	12
Corporals.....	29	22
Cooks.....	8	6
Privates, first class.....	56	42
Privates.....	113	84

Item 20: Searchlight regiment, consisting of 1 regimental headquarters and 2 battalion headquarters, as per Table of Organization No. 301, and 10 searchlight companies, as per column 6, Table of Organization No. 111, with following revisions:

	Table of Organi- zation figures.	Revised figures.
Company:		
First lieutenants.....	3	2
Second lieutenants.....	3	2
Sergeants, first class.....	13	10
Sergeants.....	14	11
Corporals.....	30	23
Cooks.....	5	4
Privates, first class.....	47	36
Privates.....	96	72

3. Considering Table of Organization No. 201, the total strength of the Engineer units shown therein is 97,000. The estimate submitted herewith is, therefore, about 50 per cent of that authorized by Tables of Organization.

4. In addition to the troops belonging to the tactical army, certain miscellaneous organizations, as shown in Table II, are necessary.

Item 1: Office Chief of Engineers, organized as follows:

**CHIEF OF ENGINEERS.**

1 major general.

**MILITARY CONSTRUCTION.**

1 brigadier general.

1. Fortification design and construction.

1 lieutenant colonel, 1 major, 1 captain.

2. General military construction.

1 colonel, 1 lieutenant colonel, 2 majors, 3 captains.

3. Military roads and railroads.

1 colonel, 1 major, 1 captain.

4. Military mapping.

1 lieutenant colonel, 1 major, 1 captain.

**TROOPS.**

1 brigadier general.

1. Commissioned personnel.

1 colonel, 1 major, 2 captains.

2. Enlisted personnel.

1 colonel, 1 major, 2 captains.

3. Organization and training.

1 lieutenant colonel, 3 majors, 2 captains.

4. Engineer schools.

1 lieutenant colonel, 1 captain.

5. Research and technical procurement and issue.

1 lieutenant colonel, 1 major, 1 captain.

**CIVIL CONSTRUCTION.**

1 brigadier general.

1. Rivers and harbors, etc.

1 colonel, 1 major.

2. Miscellaneous civil, harbor lines, wharves, bridges, public buildings, and grounds, District of Columbia, Washington Aqueduct, etc.

1 colonel, 1 major.

3. Water power.

1 lieutenant colonel, 1 major.

4. Contracts and accounts and civil service.

1 lieutenant colonel, 1 major.

5. Miscellaneous.

1 major.

Item 2: Boards.—This is to provide a resident member and a recorder for the following permanent boards:

a. Board on Engineer troops.

b. River and Harbor Board.

c. Board of Engineers (fortification).

Item 3: Rivers and harbors, public buildings and grounds, Washington Aqueduct and District Commissioner of the District of Columbia, fortifications, etc.—These are the equivalent of 13 Engineer river and harbor divisions with a total of 58 river and harbor districts. This item provides a colonel for each division except one, and a lieutenant colonel or major for each district, with captains for assistants.

Item 4: Department Engineers.—1 colonel, 1 major, and 2 captains at each department headquarters.

Item 5: Panama Canal.—1 colonel, Governor of Canal Zone; 1 lieutenant colonel, vice governor; 1 major, electrical engineer; 1 major in charge of Atlantic locks; 1 major in charge of Pacific locks; and 4 captains for assistants.

Item 6: This item includes the force necessary for the continuation of experimental work on Engineer equipment.

Item 9: Engineer School.—There are now in the Corps of Engineers approximately 294 junior officers of the permanent establishment who have not had the Engineer school course, which in time of peace is of about 18 months' duration. Some of these officers also have not had the full four years' course at West Point, so that they will be under instruction for a longer period. Furthermore, any increase in the permanent establishment will entail the ultimate instruction of all new officers commissioned in the Corps of Engineers.



**Item 12: Military mapping.**—This authorization covers triangulation parties, central mapping production plants, small and large scale topographic parties, etc. The enlisted men should be in the following grades:

Master engineer, senior grade.....	75
Master engineer, junior grade.....	125
Sergeants, first class.....	300
Sergeants.....	250
Corporals.....	300
Cooks.....	60
Privates, first class.....	300
Privates.....	650
	<hr/>
	1,960

**Item 13: Military construction.**—In view of the fact that all construction work in the theater of operations is under the charge of the Engineer Corps, it is urgently recommended that similar work in the time of peace be so assigned, thus enabling officers of the Engineers to become familiar in time of peace with the duties they will have in time of war. The authorization is based on the following:

a. At each divisional, corps troops and army troops cantonment or post:

- 1 lieutenant colonel, construction engineer.
- 1 major, general assistant.
- 1 major, building construction and repair.
- 1 major, highways, railway spurs, etc.
- 1 major, water supply, sewerage, electrical power plants, etc.
- 3 captains, assistants.
- 3 master engineers, senior grade.
- 3 master engineers, junior grade.
- 1 regimental sergeant major.
- 1 regimental supply sergeant.
- 4 battalion sergeant majors.
- 1 first sergeant.
- 3 sergeants, first class.
- 1 mess sergeant.
- 6 sergeants.
- 12 corporals.
- 4 cooks.
- 50 privates, first class.
- 100 privates.

b. At each Coast Artillery and Coast Defense Headquarters, suitable numbers, depending on size of the posts involved.

**Item 14: Military roads:** The number of officers to be included under this item depends on the amount of money appropriated by Congress for military roads—1 major and 1 captain at each department headquarters have been included tentatively. This item should not be confused with the assistants mentioned in item 13 as charged with highway construction and maintenance. The United States is interested in two classes of roads. First, those which connect our various posts and camps with the nearest large towns or cities and which are needed for the proper supply of these posts; second, a system of military highways connecting our camps and posts with strategic concentration points on our seacoasts and borders. It is this latter class of highways which this item is intended to cover.

**Item 18: Mounted battalions**—2 mounted battalions are authorized by the national defense act of June, 1916. No reduction in the present Tables of Organization is recommended.

**Item 20: Land defense searchlights**—See memorandum for the war plans division from this office dated October 21, 1918, on "Authorization for domestic antiaircraft searchlight service." This memorandum covered the Atlantic and Gulf coasts only. The authorization herein requested includes, in addition, the Pacific coast.

W. M. BLACK,  
Major General, Chief of Engineers.

TABLE I.—*Engineer troops for one army of 5 corps of 20 divisions.*

Item.	Number of units.		Table of organization.	Colonels.	Lieutenant colonels.	Majors.	Captains.	First lieutenants.	Second lieutenants.	Total.	Enlisted.	Grand total.
1	20	Divisional troops:										
2	20	Sapper regiments.....	20	20	20	40	220	270	130	700	26,280	26,980
		Engineer trains.....	27					20	20	40	1,640	1,680
3	5	Corps troops.										
4	5	Corps headquarters.....	102			5	5			10	45	55
5	5	Sapper regiments.....	20	5	5	10	55	68	32	175	6,570	6,745
6	5	Engineer trains.....	27					5	5	10	410	420
		Pontoon trains.....	113				5	5	10	20	550	570
7	1	Army troops, 1 brigadier general:										
8	1	Army headquarters.....	202		1	4	17	18	5	46	38	84
9	1	Mining regiment.....	301									
10	1	Water supply regiment.....	301									
11	1	General construction regiment.....	301									
12	1	Supply regiment.....	301									
13	1	Surveying and printing battalion	301			1	4	7	3	15	600	615
		Road regiment (regimental head-	301									
		quarters, 5 battalions, 5 wagon	317									
		companies).....										
14	1	Electrical and mechanical regiment.	301	1	1	2	11	14	6	35	1,341	1,376
15	5	Light railway and roads regiments.	301	5	5	10	55	70	30	175	6,205	6,380
16	1	Quarry regiment.....	301									
17	1	Army pontoon park.....	229									
18	1	Camouflage battalion (battalion	301			1	3	5	2	11	408	419
		headquarters, 2 companies).....										
19	1	Sound and sight ranging battalion	301			1	7	36	30	74	984	1,056
		(battalion headquarters, 5 com-	111									
		panies).....										
20	1	Searchlight regiment (regimental	301			2	18	22	20	64	2,000	2,163
		headquarters, 2 battalion head-	111	1	1							
		quarters, 10 companies).....										
		Total.....	1 B G.	32	33	76	400	540	200	1,375	47,370	48,745

TABLE II.—*Miscellaneous.*

Item.	Major general.	Brigadier general.	Colonels.	Lieutenant colonels.	Majors.	Captains.	First lieutenants.	Second lieutenants.	Total.	Enlisted.	Grand total.
1	Office Chief of Engineers.....	1	3	6							
2	Boards.....										
3	Rivers and harbors, District of Columbia,										
	public buildings and grounds, fortifica-										
	tions, etc.....			12							
4	Department engineers and assistants.....			9							
5	Panama Canal.....			1							
6	Research and technical procurement.....										
7	Instructors, War College and Leavenworth.			1							
8	Students, War College and Leavenworth....										
9	Engineer School.....	1	1								
10	Instructors, United States Military Acad-										
	emy.....										
11	Instructors, military courses, technical										
	schools.....										
12	Military mapping.....			1							
13	Military constructions.....										
14	Military roads.....										
15	General staff (to be extra numbers).....										
16	Military attachés.....			2							
17	Miscellaneous and unassigned.....			2							
18	2 mounted battalions (T of 0 511).....										
19	2 Engineer trains (Cavalry division) (T										
	of 0.521).....										
20	Land-defense searchlights.....										
	Total, Table II.....	1	4	35							
	Total, Table I.....		1	32							
	Grand total.....	1	5	67							

## ENGINEER SCHOOL, WASHINGTON BARRACKS.

### SUMMARY OF ENGINEER SCHOOL WORK, AFFECTING THE APPROPRIATION, "ENGINEER OPERATIONS IN THE FIELD."

1. During the emergency the Engineer School discontinued the training of officers and devoted its organization to the training of enlisted men in the military trade schools, the publication, reproduction, and dissemination of military information for the training of Engineer troops in the field, and the revising of publications which were obsolete under modern methods of warfare. The work now being carried on consists largely of the reproduction of maps, publications, manuals, etc., which have been revised by actual experience; also the recording and dissemination of military information by motion pictures, lantern slides, and the reproduction by photography of important records of the war. The following is a brief statement of the important work undertaken at each of the divisions now operated by the Engineer School:

#### *Central map reproduction plant.*

Approximately 500,000 copies of practice countour sketching maps for officers' training camps.

Approximately 50,000 Tables of Organization for the Army War College.

5,000 copies of map of Messines Sector, France, for use of the various aviation schools throughout the country.

5,000 copies of map of Berry-au-Bac, France, for use of the various aviation schools throughout the country.

2,000 copies of the Lewis machine gun, in colors, for The Adjutant General of the Army.

1,500 copies of map of Camp Jackson Military Reservation, S. C., in 13 parts, on a scale of 1:5,000.

1,500 copies of map of Camp Jackson Military Reservation, S. C., in 5 parts, on a scale of 1:10,000.

1,500 copies of map of Camp Jackson Military Reservation, S. C., on a scale of 1:20,000.

1,000 copies of map of Camp Jackson Military Reservation, S. C., on a scale of 1:40,000.

1,200 copies of map of Camp Meade Military Reservation, Md., in 2 parts, on a scale of 1:5,000.

2,200 copies of map of Camp Meade Military Reservation, Md., on a scale of 1:10,000.

1,000 copies of map of Camp Meade Military Reservation, Md., on a scale of 1:40,000.

7,000 copies of map of Fort Sill Military Reservation, Okla., on a scale of 1:20,000.

12,000 copies of the American Expeditionary Force Engineer Field Notes, for the Chief of Engineers.

100,000 copies of the booklet Conventional Signs in use on French and German maps.

Also staff organization charts, numerous recruiting posters, maps of various camps (such as Fort Oglethorpe, Ga., Brownsville, Tex., and vicinity, Camp McClellan, Ala., Camp Humphreys, Va., Leon Springs, Tex., West Point, Ky., Camp Sevier, S. C., and vicinity of West Point, N. Y., in 12 parts), etc.

#### *Relief Map Plant.*

2. The relief map plant was authorized by action of the Board on Engineer Equipment of Troops on November 18, 1918, the purpose being to produce in quantity relief maps upon paper by a process of embossing hitherto unknown. Experiments upon a very small scale had shown that an embossed map faithfully conforming with the contour of the land and true to scale could be produced. Attempt is now being made to produce these maps in large sizes. The first product is as yet unfinished, but will be complete within the next few weeks. If the experiment proves successful, it is proposed to reproduce in quantities of about 50 copies, every strategic coast and land defense area in the United States and its possessions, for general military use. It is anticipated that with the funds requested, maps of approximately 75 separate defense areas, posts, or camps will be made during the fiscal year.

*Engineer School Press.*

3. Among the important work of the Engineer Press may be noted:  
6,000 copies of booklet on Portable Military Bridges for the Chief of Engineers.  
2,500 copies of Engineer Enlistment Booklet, for the Chief of Engineers.  
1,000 copies of Trench Construction Booklet, for the Chief of Engineers.  
10,000 copies of Notes on Military Mining, for the Chief of Engineers.  
15,000 copies of the Appendix No. 2, Engineer Training Manual.  
10,000 copies of booklet on Instructions Concerning Battle Maps.  
53,000 copies of Occasional Papers, No. 53.

*Military trade schools.*

4. The military trade schools contemplate the training of 800 men every three months at a cost of approximately \$4,000 per month, making a total of 3,200 men trained per year at a cost of \$48,000.

**CONTINGENCIES, ENGINEER DEPARTMENT, PHILIPPINE ISLANDS.**

Estimate submitted for 1920 .....	<b>\$3, 000</b>
Amount appropriated for 1919.....	<b>2, 500</b>

This appropriation provides for contingent expenses of the Department Engineer, Philippine Department. The first appropriation of this purpose was made in the Army appropriation act of March 23, 1910, conditions in connection with the prosecution of mapping in the Philippine Islands, in remote and inaccessible localities, requiring an appropriation of wide applicability.

Previous appropriations to date have been:

Fiscal year:	
1911.....	<b>\$5, 000. 00</b>
1912.....	<b>5, 000. 00</b>
1913.....	<b>5, 000. 00</b>
1914.....	<b>5, 000. 00</b>
1915.....	<b>5, 000. 00</b>
1916.....	<b>4, 000. 00</b>
1917.....	<b>4, 000. 00</b>
1918.....	<b>4, 000. 00</b>
1919.....	<b>2, 500. 00</b>
Amount spent, fiscal year 1918.....	<b>3, 610. 44</b>
Amount spent, fiscal year 1919 to Nov. 1, 1918.....	<b>0</b>

MILITARY SURVEYS AND MAPS.

ESTIMATE SUBMITTED FOR FISCAL YEAR 1920.

Military surveys and maps: For the execution of topographic or other surveys, the securing of such extra topographic data as may be required, and the preparation and printing of maps required for military purposes, to be immediately available and remain available until December thirty-first, nineteen hundred and twenty: *Provided*, That the Secretary of War is authorized to secure the assistance, wherever practicable, of the United States Geological Survey, the Coast and Geodetic Survey, or other mapping agencies of the Government in this work, and to allot funds therefor to them from this appropriation..... \$638, 000

As shown by the attached statements, appropriations for "Military surveys and maps" have been made to the War Department since 1916. During the war the War Department has made use of various departments of the Government which are engaged upon map work, but the return to a peace status will take the principal one of these agencies, the United States Geological Survey, back to its normal function, and there has been a consequent reduction in the total amount of the appropriation from that of last year. There has been dropped from the War Department, estimates an appropriation of \$10,000 for "Maps, War Department" carried on the 1918-19 sundry civil bill for the reason that the appropriation for "Military surveys and maps" would cover this expenditure.

Military surveys and maps cover three general classes of maps: A general map of the United States and its insular possessions, including Panama, intended for defensive purposes; special military maps to large scale of strategic points along the coast of the United States; and aerial navigation maps between selected points for the training of aviators and to furnish guides for those engaged upon flying.

The maps at present being made by the United States Geological Survey form a very suitable base for military maps. In their published form, however, certain essential military information is lacking, and it is intended to secure this information at the same time that these maps are being made in the field. The needs of the War Department are toward the completion of the maps in the vicinity of the coasts and borders before the remainder of the United States is mapped.

(Sundry civil bill, 1917; approved July, 1916; Office Chief of Staff.)

Topographic maps, War Department: For reimbursing the United States Geological Survey for expenses incurred in making special topographic surveys of areas selected by the War Department, and for additional expenses incurred in securing such extra topographic data as are requested by the War Department in these or other areas, and engraving and printing the same on atlas sheets of the United States Geological Survey, \$35,000: *Provided*, That the Secretary of War is authorized to advance from this appropriation to the United States Geological Survey such sums as the Secretary of the Interior may request..... 35, 000

(Army act, 1918; approved May 12, 1917; Engineer Department.)

Military surveys and maps: For the execution of topographic or other surveys, the securing of such extra topographic data as may be required, and the preparation and printing of maps required for military purposes, to be immediately available and remain available until December thirty-first, nineteen hundred and eighteen: *Provided*, That the Secretary of War is authorized to secure the assistance, wherever practicable, of the United States Geological Survey, the Coast and Geodetic Survey, or other mapping agencies of the Government in this work, and to allot funds therefor to them from this appropriation..... 200, 000

(Urgent deficiency act, 1918; approved October 6, 1917; Engineer Department.)

Military surveys and maps: For the execution of topographic or other surveys, the securing of such extra topographic data as may be required, and the preparation and printing of maps required for military purposes, \$500,000: *Provided*, That the Secretary of War is authorized to secure the assistance, wherever practicable, of the United States Geological Survey, the Coast and Geodetic Survey, or other mapping agencies of the Government in this work, and to allot funds therefor to them from this appropriation..... \$500, 000

(Army act, 1919; approved July 9, 1918; Engineer Department.)

Military surveys and maps: For the execution of topographic or other surveys, the securing of such extra topographic data as may be required, and the preparation and printing of maps required for military purposes, to be immediately available and remain available until December thirty-first, nineteen hundred and nineteen: *Provided*, That the Secretary of War is authorized to secure the assistance, wherever practicable, of the United States Geological Survey, the Coast and Geodetic Survey, or other mapping agencies of the Government in this work, and to allot funds therefor to them from this appropriation, \$850,000: *Provided further*, That not to exceed \$150,000 of the funds appropriated herein shall be available to cover obligations incurred during the fiscal year 1918..... 850, 000

TABLE SHOWING PROJECT BY TERRITORIAL DEPARTMENTS.

Eastern Department:	
For securing and compilation of military information on base maps.....	\$10, 000
For special military maps, United States Geological Survey.....	\$5, 000
Topographic survey (New York).....	30, 000
	<hr/> 35, 000
Northeastern Department:	
For securing and compiling military information on existing base maps.	10, 000
For special military maps, United States Geological Survey.....	\$5, 000
Topographical survey.....	30, 000
	<hr/> 35, 000
Southeastern Department:	
For topographical surveys within the department—	
United States Geological Survey.....	60, 000
By department Engineer.....	80, 000
	<hr/> 140, 000
Special military map at Mobile, United States Geological Survey.....	5, 000
Topographical survey.....	30, 000
	<hr/> 35, 000
Central Department, compilation work.....	10, 000
Southern Department, for topographic work within the department.....	50, 000
Western Department, for topographic work within the department:	
By United States Geological Survey.....	40, 000
By department Engineer.....	70, 000
	<hr/> 110, 000
Reproduction.....	100, 000
Aerial navigation maps.....	16, 000
	<hr/> 551, 000
Control on general project.....	87, 000
	<hr/> 638, 000

Table to show application of \$638,000.

	United States Geological Survey.	United States Coast and Geodetic Survey.	Reproduction plant and supervision.	Departments.					
				North-eastern.	East-ern.	South-east-ern.	Central.	South-ern.	West-ern.
Field work on new surveys.	\$100,000	\$87,000	.....	.....	.....	\$80,000	\$10,000	\$50,000	\$70,000
Control of general surveys.	.....	.....	.....	.....	.....	.....	.....	.....	.....
Reproduction of work on hand.	.....	.....	\$100,000	.....	.....	.....	.....	.....	.....
Securing military information on base maps.	.....	.....	.....	\$10,000	\$10,000	.....	.....	.....	.....
Special military maps.	.....	15,000	.....	30,000	30,000	30,000	.....	.....	.....
Aerial navigation maps.	.....	.....	.....	.....	.....	5,000	.....	.....	.....
Total.....	100,000	102,000	100,000	40,000	40,000	110,000	10,000	50,000	70,000

Panama.....	\$5,000
Hawaii.....	5,000
Philippines.....	1,000

The work undertaken during fiscal year 1920 comprises:

Securing military information over so much as possible of—

2,760 square miles in Northeastern Department.....	\$10,000
5,175 square miles in Eastern Department.....	10,000
Immediate vicinity of border, Central Department.....	10,000
Original survey of approximately 7,000 out of 40,500 square miles of highly desirable and square miles unsurveyed in Southeastern Department.	140,000
Original survey of approximately 2,500 out of 35,100 square miles of highly desirable and square miles unsurveyed in Southern Department..	50,000
Original survey of approximately 5,500 out of 11,250 square miles of highly desirable and square miles unsurveyed in Western Department....	110,000
Continuation of survey of Luzon.....	1,000
Continuation of survey of Panama.....	5,000
Continuation of survey of Hawaii.....	5,000
Reproduction.....	40,000
Special military maps:	
Boston.....	35,000
New York.....	35,000
Mobile.....	35,000
Reproduction.....	40,000
Aerial navigation maps (including reproduction).....	25,000

Projects are under way at the following:

Chicago, Ill.—New York.  
San Diego, Cal.—San Antonio, Tex.  
San Antonio, Tex.—Chicago, Ill.  
Boston, Mass.—Washington, D. C.  
San Diego, Cal.—Los Angeles, Cal.  
San Diego, Cal.—Yuma, Ariz.  
Mineola, L. I.—125 miles east.  
Memphis, Tenn.—Fargo, Ark.  
Memphis, Tenn.—Moltke, Tenn.  
Lake Charles, La.—Beaumont, Tex.  
Lake Charles, La.—La Fayette, Tex.  
San Antonio, Tex.—Austin, Tex.  
San Antonio, Tex.—Eagle Lake, Tex.  
Mount Clemens, Mich.—Toledo, Ohio.  
Mount Clemens, Mich.—Lansing, Mich.  
Fairfield, Ohio.—Cincinnati, Ohio.  
Fairfield, Ohio.—Columbus, Ohio.  
Houston, Tex.—Millican, Tex.  
Houston, Tex.—Eagle Lake, Tex.  
Houston, Tex.—Beaumont, Tex.  
Houston, Tex.—Galveston, Tex.  
Dallas, Tex.—Fort Worth, Tex.



Projects are under way at the following—Continued.

Dallas, Tex.—Waco, Tex.  
 Dallas, Tex.—Austin, Tex.  
 Dallas, Tex.—Millican, Tex.  
 Bellville, Ill.—Carbondale, Ill.  
 Bellville, Ill.—Roodhouse, Ill.  
 Rantoul, Ill.—Decatur, Ill.  
 Rantoul, Ill.—Mattoon, Ill.  
 Roodhouse, Ill.—Decatur, Ill.  
 Fort Sill, Okla.—Oklahoma City, Okla.  
 Oklahoma City, Okla.—Ardmore, Okla.  
 Wichita Falls, Tex.—Fort Sill, Okla.  
 Wichita Falls, Tex.—Fort Worth, Tex.

An exact estimate may not be made. These maps are made up in part from compilation of existing maps from all sources obtainable, and are supplemented by ground reconnaissance and aerial photography.

Control by United States Coast and Geodetic Survey..... \$87,000

*Table showing division of projects.*

Progressive military maps, United States:

Control.....	\$87,000
Field work.....	310,000
Additional data.....	20,000
Reproduction.....	40,000
	<hr/>
	\$457,000
Islands.....	11,000

Special military maps:

Control.....	15,000
Field work.....	90,000
Reproduction.....	40,000
	<hr/>
	145,000

Aerial navigation maps:

Field work.....	5,000
Reproduction.....	20,000
	<hr/>
	25,000

638,000

*Military surveys and maps.*

Employees.	Rate.	Estimated, 1920.	Estimated, 1918.
<b>Salaries:</b>			
Clerk.....per annum..	\$1,500.00	2	2
Do.....do.....	1,200.00	5	5
Do.....do.....	1,000.00	2	2
Draftsman.....do.....	2,000.00	1	1
Do.....do.....	1,800.00	1	1
Do.....do.....	1,500.00	6	4
Do.....do.....	1,440.00	9	6
Do.....do.....	1,400.00	2	1
Do.....do.....	1,380.00	9	9
Do.....do.....	1,320.00	9	6
Do.....do.....	1,300.00	2	1
Do.....do.....	1,260.00	2	1
Do.....do.....	1,200.00	2	1
Do.....do.....	1,080.00	5	3
Do.....do.....	1,000.00	1	1
Do.....do.....	960.00	1	1
Do.....do.....	720.00	1	1
Do.....per month..	96.67	3	2
Do.....per diem..	5.00	6	4
Inspector.....per annum..	1,680.00	1	1
Do.....do.....	1,320.00	1	1
Junior engineer.....do.....	1,800.00	3	2
Lithographer.....do.....	1,500.00	2	1
Map mounter.....do.....	1,200.00	2	1
Map printer.....do.....	840.00	2	1
Negative cutter.....do.....	1,200.00	3	3
Do.....do.....	1,080.00	3	2

Military surveys and maps—Continued.

Employees.	Rate.	Esti- mated, 1920.	Esti- mated, 1918.
Salaries—Continued.			
Pressman.....per annum..	\$1,500.00	2	1
Do.....do.....	1,500.00	2	1
Surveyor.....do.....	1,500.00	10	.....
Do.....do.....	1,380.00	13	1
Surveyman.....do.....	1,200.00	12	.....
Do.....do.....	1,080.00	21	1
Topographic draftsman.....do.....	1,800.00	4	3
Do.....do.....	1,500.00	40	39
Do.....do.....	1,440.00	10	9
Do.....do.....	1,380.00	28	24
Do.....do.....	1,320.00	44	40
Do.....do.....	1,200.00	24	22
Do.....do.....	1,080.00	60	57
Topographers.....do.....	2,000.00	5	.....
Do.....do.....	1,800.00	5	.....
Do.....do.....	1,500.00	6	.....
Do.....per month..	150.00	8	6
Transfermen.....per annum..	1,440.00	2	1
Steamfitter.....per diem..	5.00	6	5
Plumbers.....do.....	5.00	2	2
Carpenters.....do.....	5.00	1	1
Chauffeurs.....do.....	2.25	2	1
Laborers.....per annum..	834.00 to 600.00	24	20
Do.....do.....	840.00	5	.....
Do.....per diem..	2.50 to 1.75	8	6
Total.....		430	304
Salaries.....		\$507,513.34	\$335,734.34
Wages.....		\$34,848.00	\$32,077.00

Other objects of expenditure.

	1920	1918
Transportation.....	\$12,794.36	\$3,251.55
Telephone and telegraph service.....	32.00	15.75
Nonpersonal service.....	12,312.32	2,378.96
Stationery.....	1,017.19	74.42
Equipment and material.....	66,223.76	37,926.67
Miscellaneous.....	3,259.03	318.87
Total.....	638,000.00	411,469.69

The item of transportation is made up from present expenses. It involves items of transportation appearing in the civil bureaus and such could not be properly handled by the Quartermaster Department, and also emergency items with reference to work done by this bureau.

Telegraph represents items for civil bureaus.

Nonpersonal service is largely made up of items under civil bureaus.

Equipment and material covers everything from printer's ink to films for aerial cameras, and is estimated on present experience.

Increase of force caused by discharge of soldiers.

## BUILDINGS, CAMP HUMPHREYS.

JANUARY 29, 1919.

The CHAIRMAN COMMITTEE ON MILITARY AFFAIRS,  
*House of Representatives.*

SIR: 1. The school for instruction of Engineer officers was organized in the late sixties at Willetts Point, N. Y., and continued until the Engineer troops were moved to Washington Barracks about 1901. New school buildings were provided there from funds appropriated June 30, 1902. These buildings as projected were intended to be sufficient to house a school, giving a two-year course to about 10 to 15 officers, the total number in the Corps of Engineers being 160 officers.

2. The Army act of March 3, 1904, increased the Engineers to 188, and the annual classes to about 20, theoretically, but the entire project for quarters was never completed and this made it necessary for a number of students to reside in the city.

3. The Army act of February 22, 1911, increased the number of Engineer officers to 248, and the congestion at the school increased. This was still further accentuated by the act of June 3, 1916, increasing the corps to 505 officers, although the actual personnel never reached that figure until November, 1918.

4. The war has shown that even 505 officers of Engineers will be entirely insufficient for the Engineer proportion of the Army now deemed necessary under any one of the various schemes of reorganization considered. It has also shown that the Engineer service must cover a wider field than heretofore assigned to it, and there is no question but that a two-year postgraduate course is the very least that will permit giving our younger officers the fundamental knowledge they must possess to do their work properly. A close estimate is that we will have to have two classes at the school, and that each class will contain at least 100 members. To train such large classes properly requires not only an adequate force of instructors, but also sufficient laboratories, machine shops, drafting rooms, and mechanical appliances. Furthermore, military engineering requires a wide experience in practical work in mining, in the use of high explosives, in the location, construction, and operation of narrow gauge and standard gauge railroads, in the construction and use of floating and fixed bridges involving the use of pile drivers, excavators, concrete mixers, etc. To give practical instruction in these military appliances, the Engineer school must be located on a large reservation, containing rolling country, small streams, deep ravines, extensive water areas, and various kinds of bottom.

5. At Humphreys the United States owns just such a reservation and a basic plan providing for future growth has been studied with special attention to our immediate requirements. Plans have been drawn up for a school to meet these requirements. The site selected is Camp A. A. Humphreys, Va., the location of which, on the Potomac River, near, but not too near, Washington, makes it peculiarly available. The present site of the Engineer School at Washington Barracks is too limited in area for the new school. The buildings now there can be utilized to meet other urgent needs of the service now unprovided for. Furthermore, it is contemplated that a College of Military Research will be built adjoining the Engineer School to continue development work in lines shown necessary by this war. The reservation at Camp Humphreys is, as stated, very well adapted to practical field instruction in engineering of various kinds, and the land is in permanent ownership of the United States. The total area which has been acquired at Camp Humphreys is 6,168 acres, at a cost of \$419,509.90. Payment for 5,120 acres of this was completed before the signing of the armistice, and negotiations for the remainder (1,048 acres) were completed prior to the signing of the armistice.

6. There is given below an approximate estimate of buildings which it would be most desirable to construct at once. The aggregate cost for this part of the new engineer school would be \$8,662,000, and the cost of the administrative buildings and the College of Military Research would aggregate \$2,500,000, making a total expenditure which is most desirable at an early date of \$11,162,000.

Buildings.	Approximate cost, present prices.	Estimate cost per cubic foot, present prices.	Estimate cost per cubic foot, pre-war prices.	Architect's fee at 1.2 per cent.
1. Administration .....	\$482,000	\$0.60	\$0.30	\$2,892
2. Recitation rooms .....	270,000	.50	.22	1,423
3. Study room and library .....	270,000	.50	.22	1,423
4. Auditorium, lecture hall, etc. ....	430,000	.60	.30	2,560
5. Model room, museum, etc. ....	430,000	.60	.30	2,580
6. Laboratory and recitation room .....	216,000	.50	.22	1,146
7. Laboratory and recitation room .....	216,000	.50	.22	1,140
8. Laboratory and recitation room .....	216,000	.50	.22	1,140
9. Laboratory and recitation room .....	216,000	.50	.22	1,140
14. Map plant (electric drive) .....	300,000	.60	.25	1,500
15. Printing plant (electric drive) .....	300,000	.60	.25	1,500
East group student officers' quarters (60 officers) .....	653,000	.50	.22	3,450
West group student officers' quarters (60 officers) .....	653,000	.50	.22	3,450
South group instructors' quarters (16 officers) .....	180,000	.60	.25	900
Commanding officers' quarters .....	30,000	.60	.25	150
Power plants and heating conduits .....	1,500,000	.40	.15	3,600
Gas plant for Engineer post .....	200,000	.40	.15	1,440
Roads, grading, drainage, clearing, fences, etc. ....	1,300,000			
Bridges, retaining walls, culverts, etc. ....	50,000			
Sewers, water piping, etc. ....	750,000			
	8,662,000			31,448
For College of Military Research:				
Heating and lighting plants, piping, etc. ....	500,000	.60	.30	3,000
Main building .....	800,000	.60	.25	4,000
Four buildings, central group, each \$300,000 .....	1,200,000	.60	.25	6,000
Architect's fee for general plans, both school and college ..				5,000
Architect's fee for plans, separate buildings, if ordered ..				
Total .....	2,500,000			18,000
Grand total .....	11,162,000			49,448

7. It is realized that no such sum can be expended to advantage in this locality in one year. Further, it is not desired to commence any more building than is essential, until the prices of labor and materials shall have reached their permanent peace basis. Therefore, the estimates submitted for the fiscal year 1920 (\$2,200,000 for Engineer school and \$800,000 for College of Military Research) cover only such buildings as should be begun without delay. They have been selected so as to meet the minimum requirements of the present situation which exists, without any reference to the probable future increase in the size of the Corps of Engineers, and will be constructed in such a manner as to utilize nearby brick kilns, etc., and to take immediate advantage of any reduction in prices. The details of this reduced plan are shown in the following tabulations:

ESTIMATES FOR 1920—BUILDINGS.

	Approximate cost.
Engineer School proper:	
1. Main administration building. (This can be used in the interim not only for records, etc., but also for recitation rooms and possibly for quarters) .....	\$482,000
2. One auditorium, lecture hall, etc. (This can also be used during the interim for the fortification model rooms, sand boxes, instruction, moving pictures, etc.) .....	430,000
3. One laboratory and recitation room building .....	216,000
4. The eastern group of student officers' quarters, each building being of the apartment-house type, so subdivided as to permit the assignment to each student officer of sufficient rooms to meet the requirements of his rank .....	653,000
5. One student apartment building of the western group .....	100,000
6. Six quarters for instructors, with accommodations for family; each estimated at \$20,000 .....	120,000
7. A portion of the permanent gas plant, needed in connection with the lighting and cooking for this part of the finished Engineer School .....	150,000

Engineer School proper—Continued.	Approximate Cost.
8. A temporary steam heating plant of sufficient size only to heat the group of buildings above described.....	\$49,000
Total for school proper.....	2,200,000

College of Military Research:

1. Main building with temporary heating plant in the basement.....	800,000
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8. A cantonment of temporary modern buildings of the conventional type was erected at Camp Humphreys for use during the war for a training and replacement depot for Engineer troops. These buildings are not of a type suitable for good school work, either in size, arrangement, or construction materials, nor for the housing of a permanent garrison. They can be made to serve for temporary school and garrison use while suitable buildings are being erected and as long as they last, which will be only for a few years; they will be utilized during summer training periods for Engineer troops. For this last purpose they are well adapted.

W. M. BLACK,  
Major General, Chief of Engineers.

# ESTIMATED SAVINGS, 1919.

*Summary of estimated amounts which can be turned back from 1919 appropriations.*

	Total appropriated.	Amount of unal- lotted balance which it is esti- mated will not be required.	Amount which it is estimated will be saved by canceling of contracts.
"Engineer equipment of troops" .....	\$135, 000, 000.00	\$125, 330, 966. 16	\$1, 202, 000.00
"Engineer operations in the field":			
Appropriated.....	1, 018, 250, 000.00	} 447, 744, 042. 72	131, 852, 000. 00
Contract authorization.....	200, 000, 000.00		
Total.....	1, 218, 250, 000.00	573, 075, 008. 88	132, 054, 000.00

Grand total of \$705,129,008.88 will probably be saved from appropriations totaling \$1,153,250,000 plus contract authorization of \$200,000,000.















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